

# AGBOT II

*Could robots become helpers in future farms?*



QUT is working on small, lightweight robots that are part of a new generation of agricultural machines. These robots are designed for getting rid of weeds, applying vital nutrients to crops, and gathering data to help farmers make informed decisions about their crops.

The AgBot II is an innovative agricultural robot prototype fully designed and fabricated by QUT researchers and engineers with significant co-funding from the Queensland Government. AgBot II forms part of a new generation of crop and weed management machinery, intended to work in autonomous groups across both broadacre and horticultural crop management applications. The robot's cameras, sensors, software and other electronics enable it to navigate through a field, apply fertiliser, detect and classify weeds, and manage weeds either mechanically or chemically, providing a tool for farmers to help reduce operational costs and efficiency losses.

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## WHEN

Sunday 20 August 2017

## WHERE

Kidney Lawn, Old Government House (Botanical Gardens side of House)

## TIME

9am – 4pm

## TICKETS

No bookings required

## PRESENTED BY

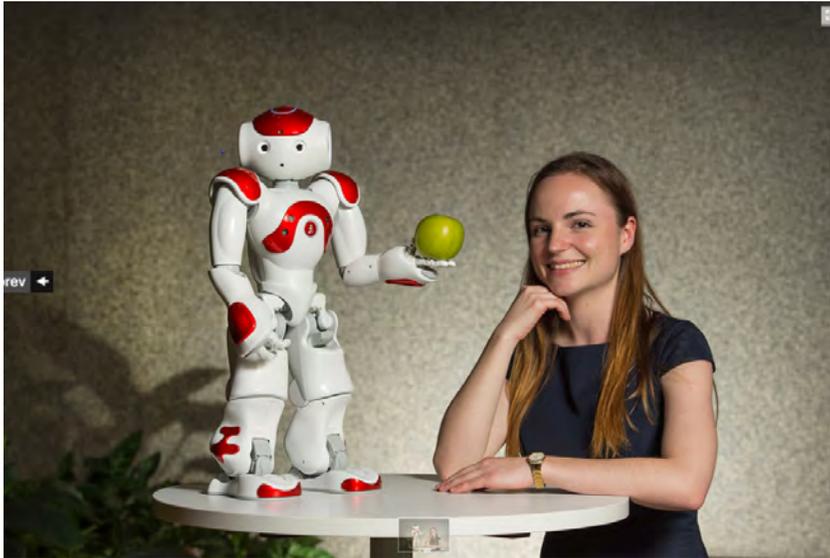
QUT Agricultural Robotics Team

## ACKNOWLEDGEMENTS

Funded by Queensland Department of Agriculture and Fisheries (2013 – 2017)

# ANDY THE HEALTH NAO ROBOT

*Come face-to-face with QUT's NAO Robot, Andy.*



QUT is currently investigating the acceptability and utility of social robotics for healthcare applications.

For those 18 and over, you can take part in a QUT research study on healthcare robots. This study will assist QUT in better understanding how health robots could be used in the future.

## **Nicole Robinson**

Nicole Robinson is a PhD candidate at Queensland University of Technology. Nicole's research topic involves using social robots as a new tool to deliver a health behaviour change program. Nicole is interested in innovative technology such as social robots, and how they can be used to help people to improve their motivation towards making a healthy change.

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## **WHEN**

Sunday 20 August 2017

## **WHERE**

Kidney Lawn, Old Government House  
(Botanical Gardens side of House)

## **TIME**

9am – 4pm

## **TICKETS**

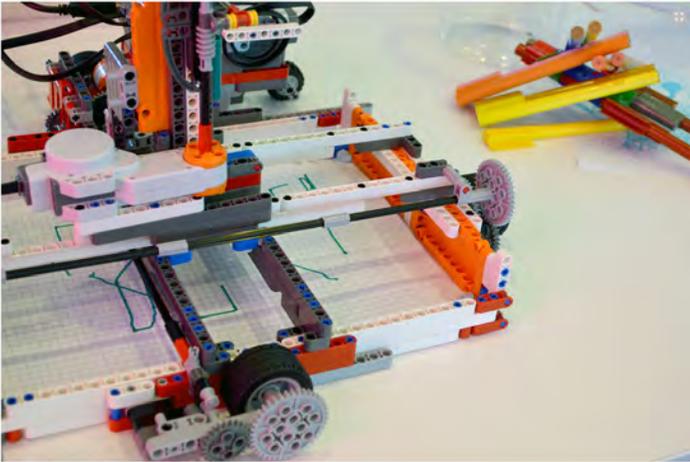
Drop-in, no bookings required

## **PRESENTED BY**

Nicole Robinson

# ARTBOTS

*Make your mark using LEGO Robotics!*



Visit the Registrar's Garden behind QUT Art Museum to meet a drawing robot who will work collaboratively with you to create your own artwork.

While you're there, be sure to discover more about robots and artificial intelligence in the galleries at QUT Art Museum. Enter a surreal retro robotic world presented by Artist duo Cake Industries in their exhibition *Machination*, and find out how artificial intelligence can be used creatively by artists in the exhibition *Why future still needs us: AI and humanity*.

Artbots is a QUT Art Museum and The Cube collaboration.

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## WHEN

Sunday 20 August 2017

## WHERE

Registrar's Garden, QUT Art Museum

## TIME

9am – 4pm

## TICKETS

Drop-in, no bookings required

## PRESENTED BY



# AWARD WINNING ROBOTIC ARMS

*Join us for a glimpse into how robots can engage with and influence the world around them*



This interactive demonstration gives insight into how robot arms of the future will help with back-breaking work such as automated fruit harvesting and warehouse packing. On display will be a range of robotic arms including Cartman, a custom-built Cartesian robot. With six degrees of articulation and both a claw and suction gripper, Cartman gives us more flexibility to complete the tasks than an off-the-shelf robot can offer.

Test your skills with interactive demos allowing you to get a feel for how challenging it is for a robot to interact with the world. The Australian Centre for Robotic Vision at QUT has recently been awarded first prize at the 2017 Amazon Robotics Challenge in Japan.

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## WHEN

Sunday 20 August 2017

## WHERE

Level 4, Science and Engineering Centre (P block)

## TIME

9am – 12pm, 1pm – 2pm, 2.30pm – 4pm

## TICKETS

Drop in, no bookings required

## PRESENTED BY



# BREMEN MUSIC BOT

*Bremen Music Bot is an artificial intelligence robotics system that re-invents a four-piece band.*



A different animal character represents each group member; the donkey, dog, cat and chicken. These characters collect sound from the surrounding area of its set up location and transform these disparate sounds into a melody. Each animal uniquely interacts with its environment by collecting different frequencies: the donkey is designed to collect the entire range, the dog at low frequency, the cat at mid-range and the chicken at high frequency.

The data is then transmitted to a server processed in real time by Magenta, an artificial intelligence algorithm on Google's open-source machine learning platform, Tensor Flow. It is then played back to the audience as music.

This was created at the Nabi E I Lab (Emotional Intelligence Laboratory). The lab is a media art production studio at the Art Center Nabi, a digital Art Museum in Korea. The Laboratory aims to create new values with people from various fields such as artists, programmers, engineers, and designers. nabi E.I.Lab is experimenting and producing creative projects mainly related to artificial intelligence, robotics, and data science.

**Artists:** Lab manager/Artist – YoungKak Cho; Software Developer – YoungTak Cho; Designer – JungHwan Kim; Interactive Designer – YuMi Yu; Robotics Engineer – JoonHyuk Sim

**Image:** Nabi E.I. Lab, Bremen Music Bot 2016, Tech, software and mixed media, Courtesy Nabi E.I. Lab

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## WHEN

Sunday 20 August 2017

## WHERE

The Dining Room, Old Government House

## TIME

9am – 4pm

## TICKETS

No bookings required

## PRESENTED BY



## ACKNOWLEDGEMENTS

Supported by the Commonwealth through the Australia-Korea Foundation, which is part of the Department of Foreign Affairs and Trade

# CATCH YOUR BREATH



*Every breath is a sacrament, an affirmation of our connection with all other living things, a renewal of our link with our ancestors and a contribution to generations yet to come.*

**~David Suzuki, environmentalist**

Suzuki's words suggest the significance of the air we breathe. Every atom of the air we inhale has been part of the life cycle of another organism, the natural processes of the earth's systems and the man-made processes of our economic systems. But how can we fully appreciate the significance of something we cannot see? Our breath is without a visible form and lost to us once exhaled.

Catch Your Breath makes breath visible through the action of blowing a bubble in a tank of water and freezing it with high-speed flash photography. The resulting image may help to promote an understanding of the unique beauty of our own breath and by measuring the shape of that breath we can readily compare it with those of others and perhaps appreciate the beauty of our collective breath. While intended to connect us, is this measurement any different to the profiling of our every online action by those who wish to monitor, influence and monetise us?

**Andrew Styan** is an emerging new media artist developing strategies for shifting public engagement with the challenge of climate change and its underlying social, political and economic causes. His practice utilises electronics, computer coding, interactivity and small to large-scale electromechanical devices to create installations, videos and kinetic objects that are intended to make visible these complex issues. These concepts and media reflect a former career in industrial research as a metallurgist in the steel industry and lifelong interests in nature, photography and science. He has exhibited widely locally and nationally and in 2015 was awarded the prestigious Dr Harold Schenberg fellowship for graduating artists. His recent theoretical and practical research focusses on the socio-economic origins that are common to all the crises of ecology, equality and democracy; the psychology behind the individual and collective inability to tackle these crises; and the social agency of contemporary art practices and institutions.

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## WHEN

Sunday 20 August 2017

## WHERE

The Hall, Old Government House

## TIME

9am – 4pm

## TICKETS

Drop-in, no bookings required

# CHAIR WALKER

*The chair that likes to be on its own!*



Chair Walker takes an everyday object and playfully upends its function and our expectations. Using a multi-legged waking robotic system, this installation strips away its original utility with surprising results.

This work is designed to create a dialogue about personality and behaviour, through its characterisation of avoiding intimacy and social interactions.

This was created at the Nabi E I Lab (Emotional Intelligence Laboratory). The lab is a media art production studio at the Art Center Nabi, a digital Art Museum in Korea. The Laboratory aims to create new values with people from various fields such as artists, programmers, engineers, and designers. nabi E.I.Lab is experimenting and producing creative projects mainly related to artificial intelligence, robotics, and data science.

Artist – YoungKak Cho

Robotics engineer – JoonHyuk Sim

Image - *Chair Walker 2015*, wood chair, tech and software. Courtesy Nabi E.I. Lab.

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## WHEN

Sunday 20 August 2017

## WHERE

The verandah, Old Government House

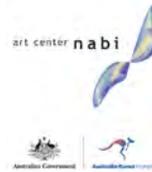
## TIME

9am – 4pm

## TICKETS

No bookings required

## PRESENTED BY



## ACKNOWLEDGEMENTS

Supported by the Commonwealth through the Australia-Korea Foundation, which is part of the Department of Foreign Affairs and Trade

# CODE-A-BOT



Our recycling robots are slow and inefficient. We need your help to recode our robots and turn DERP (Department of Environmental Resource Processing) into a recycling plant for the future!

Code-A-Bot is an interactive digital game putting you in charge of programming robot workers to collect and sort rubbish, improving the overall efficiency of a waste recycling plant. Using The Cube's digital touch screens, robots can be coded to move, sense, and collect or distribute rubbish around the facility and into the correct bins. You can also work together with other players and their robots to improve efficiencies and achieve the best results for DERP.

Code-A-Bot will be hosted on the day by Neridah Waters and David Burton.

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## WHEN

Sunday 20 August 2017

## WHERE

The Cube, Science and Engineering Centre (P block)

## TIME

9am – 4pm

## TICKETS

Drop-in, no booking required

## PRESENTED BY



# CRATE EXPECTATIONS



Crate Expectations is a roaming interactive robotic sculpture using vintage packing crates, appearing as an unexpected abstract cabinet of curiosities in public places.

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## **WHEN**

Sunday 20 August 2017

## **WHERE**

Roaming installation

## **TIME**

9am – 4pm

## **TICKETS**

No bookings required

## **PRESENTED BY**

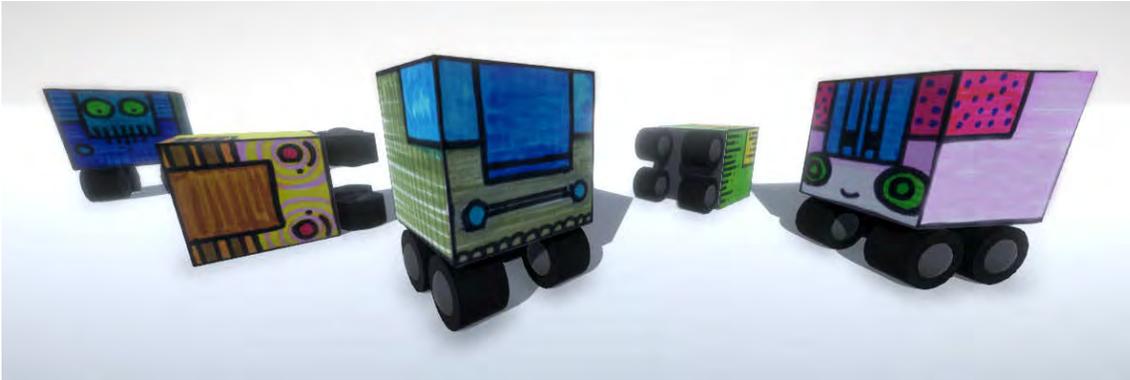
Cake Industries (Jesse Stevens & Dean Petersen)

## **ACKNOWLEDGEMENTS**

Commissioned by DAE White Night Ballarat 2017.

# DESIGN A BOT

*Families are invited to participate in a collaborative digital artwork by designing their own robot.*



Inspired by Code-A-Bot, The Cube's new interactive digital game, Design a bot is an installation designed to engage a younger audience by blending their interaction between physical and digital spaces.

These robots are inefficient and need to learn the skills to do their job properly and more importantly – they lack personality! Colour in a robot template and scan it instantly into a 3D world, where it will come alive and attempt to perform its duty. Be prepared though, there is a lot of recyclable junk to sort, and their wheels are still a little wobbly...

Code-A-Bot will launch at Robotronica on 20 August. Afterwards, it will rotate on The Cube's screens, view Cube screens for showing times.

Steve Berrick is an artist and creative coder. With a degree in Computer Science, his work focuses on software and technology. Berrick creates software-driven experiences for interactive systems and performances. His collaborative practice has been presented in galleries, theatres, museums and the street. Berrick is an artist with the ololo art collective, Graffiti Research Lab Perth and pvi collective.

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## WHEN

Sunday 20 August 2017

## WHERE

P419 (The Forum), level 4, Science and Engineering Centre (P Block)

## TIME

9am – 4pm

## DURATION

Approx 10 minutes

## SUITABLE FOR

5+ and their families

## TICKETS

Drop-in, no bookings required

## CREATED BY

Steve Berrick

# DESTINATION: ROBOTS – 1987

*Enjoy some nostalgia from Cake Industries' personal collection of childhood robots.*



A walk back in time to when robots were delivering cookies, dancing, and running into walls. The wave of robot-mania in the 1980s was inescapable, with almost every household owning at least some kind of robot or robot toy. Unfortunately, domestic toy technology wasn't quite up to the task, but that didn't stop us worshipping them just the same.

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## WHEN

Sunday 20 August 2017

## WHERE

The Governor's Library, Old Government House

## TIME

9am – 4pm

## TICKETS

Drop in, no bookings required

## PRESENTED BY

Cake Industries (Jesse Stevens & Dean Petersen)

# ECHO

*Echo is an immersive installation which explores empathy and connection through face swapping and storytelling.*



The installation is a virtual mirror, investigating myopic self-obsessed tendencies. It is a war between empathy and narcissism – who will win? The users' face is captured, high-jacked and then returned to hybridise and control the facial features of others.

How do we feel when someone blinks with our eyes or smiles with our lips?

*WARNING: Echo contains material for mature audiences, no children permitted*

Georgie Pinn is a multimedia artist who has been flexing her skills across Europe and Australia for over 17 years. Some of her audio visual projects include holographic ghosts for a Hamlet production, interactive animation/dance events for Federation Square and directing and editing music videos for bands such as Regurgitator. In the last 7 years she has been developing a range of interactive motion triggered animation/sound projects.

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## WHEN

Sunday 20 August 2017

## WHERE

Level 4, Science and Engineering Centre (P block)

## TIME

9am – 4pm

## SUITABLE FOR

15+

## TICKETS

Drop-in, no bookings required

## PRESENTED BY

Georgie Pinn

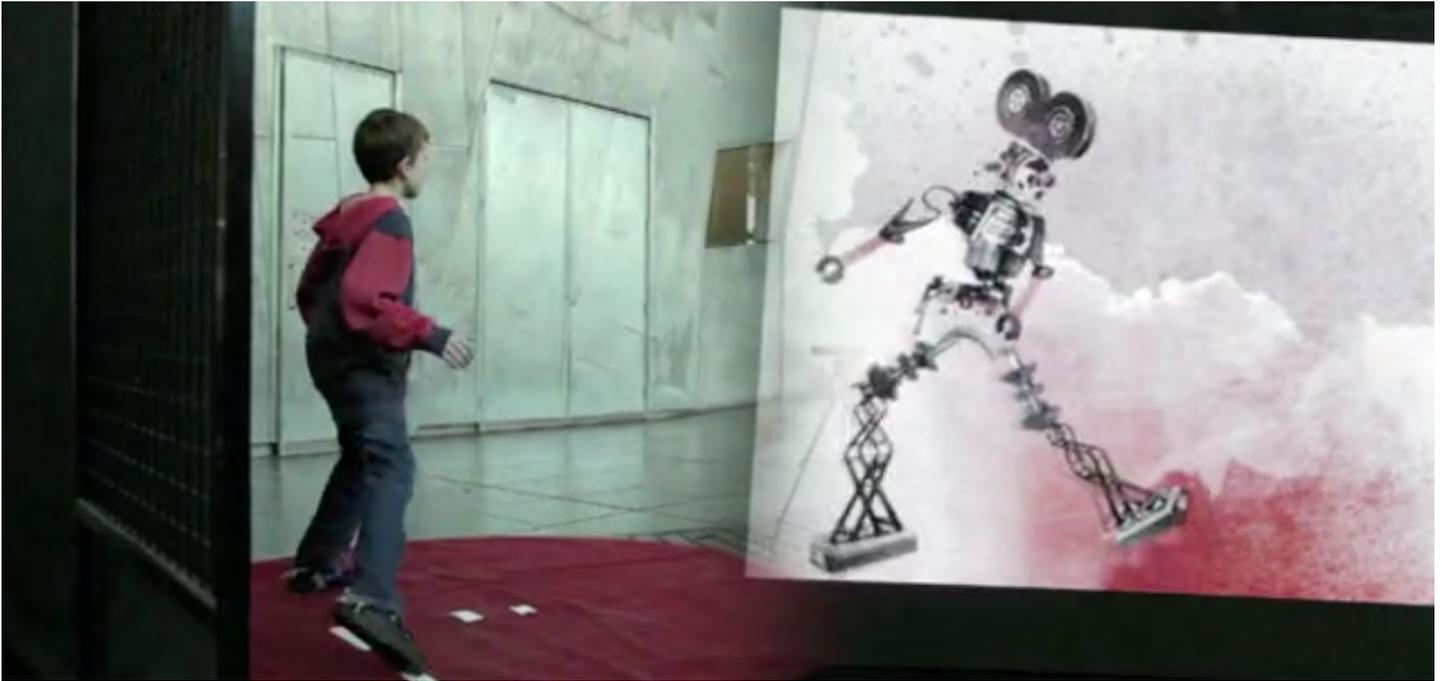
## ACKNOWLEDGEMENTS



<https://www.qut.edu.au/news?news-id=117070>

# ELECTRIC PUPPET

*Welcome to the world of Electric Puppet!*



Families are invited to design their own 2D digital robots, from a library of body part images, and animate them. Using real-time motion tracking, the puppets' movements are driven by the actions of the participant, bringing them to life.

Georgie Pinn is a multimedia artist who has been flexing her skills across Europe and Australia for over 17 years. Some of her audio visual projects include holographic ghosts for a Hamlet production, interactive animation/dance events for Federation Square and directing and editing music videos for bands such as Regurgitator. In the last 7 years she has been developing a range of interactive motion triggered animation/sound projects.

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## WHEN

Sunday 20 August 2017

## WHERE

HiQ screens, QUT Library

## TIME

9am – 4pm

## TICKETS

Drop-in, no bookings required

## PRESENTED BY

Georgie Pinn

## ACKNOWLEDGEMENTS

Commissioned by Federation Square

# PLASTIC WASTE ELIMINATION CHALLENGE

*Be an eco-warrior and try your hand at piloting a small robot boat in the litter cleanup challenge!*



Marine and waterway litter threatens our oceans, kills countless animals, and pollutes precious ecosystems. In this challenge you will be a part of a team that competes to collect as much floating trash as possible, while learning how much you have helped to protect the marine environment.

## Presented by

- Matt Dunbabin – QUT Institute for Future Environments, Australian Centre for Robotic Vision
- Manuela Taboada – QUT School of Design
- Tim Williams – QUT School of Design
- Nicholas Clegg – QUT Mechatronics Student
- Amira Azimi – QUT Interactive and Visual Design Student
- Pascal Cunin – QUT Interactive and Visual Design Student
- Monica Wong – QUT Interactive and Visual Design Student
- Peter Smith – Blind Mystics

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## WHEN

Sunday 20 August 2017

## WHERE

QUT Healthstream Swimming Pool

## SESSIONS

Morning: 9am, 9:30am, 10am, 10:30am, 11am, 11:30am. Afternoon: 12pm, 1pm, 1:30pm, 2pm, 2:30pm, 3pm, 3:30pm.

## DURATION

20 minutes

## SUITABLE FOR

6+ All children must have a parent/guardian to enter the pool area and they must be present at all times.

# MACHINATION



Darkly humorous and provocatively satirical, Cake Industries' performative mechatronic sculptures construct anachronistic narratives to reveal the struggles and absurdities of modern life.

Machination is a collection of their most recent works that marks a new direction in their ever-evolving practice. Human/object hybrid forms and collaged archival video combine to help forge a surreal world, offering a new perspective on our own world.

Included are works from Cake Industries' recently completed Voyages project based on the history, essence and cultural impact of historic amusement park Luna Park, Melbourne.

Regional Victorian based experimental artist duo Jesse Stevens & Dean Petersen have worked together since 2006 as permanent collaboration Cake Industries.

Image: *King 2017*, Cake Industries (Jesse Stevens & Dean Petersen). Created as part of the *Voyages* series

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## WHEN

Sunday 20 August 2017

## WHERE

QUT Art Museum

## TIME

9am – 4pm

## SUITABLE FOR

13+

## TICKETS

Drop-in, no bookings required

## PRESENTED BY

Cake Industries (Jesse Stevens & Dean Petersen)

## ACKNOWLEDGEMENTS

The Voyages project has been assisted by the Australian Government through the Australia Council for the Arts, its arts funding and advisory body.



Additionally, the artists would like to thank Luna Park Melbourne and its staff for their invaluable support for project Voyages. It's Nice To Be Alive originally commissioned by the City of Ballarat for the 2016 Laneways Lumieres.

# MAKO ROBOTIC-ARM ASSISTED SURGERY

*We invite you to be a surgeon for the day with the Mako Robotic-arm, an innovative surgical system used by orthopaedic surgeons across Australia to improve the lives of patients.*



We are entering a world where people need to interact with a range of robots in their daily lives. Today, you will not only get a chance to experience being a surgeon and complete a fun task with a Robot, but also help QUT researchers understand human-robot interactions in a game-like environment.

Mako Surgery incorporates advanced image-based, patient specific pre-planning software and intra-operative joint balancing capabilities with a surgeon controlled robotic arm to accurately and precisely perform bone preparation for implantation of the required components in the planned position and orientation.

[Stryker](#) is one of the world's leading medical technology companies. The Company offers a diverse array of innovative products and services in Orthopaedics, Medical and Surgical, and Neurotechnology and Spine, which help improve patient and hospital outcomes. Stryker is active in over 100 countries around the world.

## **Research Team**

Anjali Jaiprakash, Kate Letheren and Selen Türkay (QUT)

Michael Nasuta (Stryker)

This event is part of The Hospital of the Future.

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## WHEN

Sunday 20 August 2017

## WHERE

Rooms 413 & 413A, level 4, Science and Engineering Centre (P block)

## TIME

9am – 4pm

## PRESENTED BY



Additional links:

<https://theconversation.com/surgeons-admit-to-mistakes-in-surgery-and-would-use-robots-if-they-reduced-the-risks-79659>

<https://theconversation.com/australias-first-robotic-help-in-a-hip-replacement-operation-57809>

<https://theconversation.com/robots-in-health-care-could-lead-to-a-doctorless-hospital-54316>

<https://theconversation.com/digital-diagnosis-intelligent-machines-do-a-better-job-than-humans-53116>

# MR PARTYBOT 1977

*Disco was in, flares were in, your mum and dad probably had a Kingswood and robots had just become popular.*



Inspired by science fiction at the time, Party-bots began to make appearances at venues and discos around the world. Generally, simply a remote-controlled trolley with plastic cladding, these Party-bots were hugely popular and presented a vision of the future where we could be served and entertained by robots.

Originally beginning his life in the 1970s as a promo vehicle for a South Australian bank, Mr Party-bot has been reborn from obscurity to roam around spreading a party wherever he goes.

This work will appear throughout the day alongside other roaming pieces by artists Cake Industries.

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## WHEN

Sunday 20 August 2017

## WHERE

Roaming installation

## TIME

9am – 4pm

## TICKETS

No bookings required

## PRESENTED BY

Cake Industries (Jesse Stevens & Dean Petersen)

# POP-UP LIBRARY TINKER TABLE



Visit the Pop-up Library for some hands-on experimenting with a range of technologies such as Ozobots, Cubelets, littleBits and more.

Explore coding, circuits, motion and robotics in an open learning environment and browse our library collection.

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## WHEN

Sunday 20 August 2017

## WHERE

Kidney Lawn, Old Government House, (Botanical Gardens side of House)

## TIME

9am – 4pm

## SUITABLE FOR

Ideal for children aged 8 – 16 years and their families

## TICKETS

Drop-in, no bookings required

## PRESENTED BY



# QUT AERIAL ROBOTICS



Learn about the many ways QUT's Research Engineering Facility is using aerial robots (drones) to transform how data is captured for researchers, and how robotics is being utilised to shape technology and services of the future.

Learn from our commercially certified operators, see the many platforms and sensors they employ, and find out how we incorporate data to inform better decision making.

Note: Live demonstrations will be conducted on the hour and simulators will be set up for participants to experience what flying a drone is like (duration: 20 mins). Static displays will run 9am – 4pm. Instructors from QUT's Aerospace Society will be on hand to offer assistance.

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## WHEN

Sunday 20 August 2017

## WHERE

Room 134, O block

## TIME

9am – 4pm

## TICKETS

Drop-in, no bookings required

## PRESENTED BY

QUT Research Engineering Facility and QUT Aerospace Society

# QUT'S MARINE BOTS



Come and see QUT's latest marine robots currently being used for real-world research, monitoring and management of our oceans.

On display will be a range of robot boats that operate in extreme environments as well as an interactive display of 'COTSbot', QUT's underwater robot designed to help control the crown-of-thorns starfish on the Great Barrier Reef.

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## WHEN

Sunday 20 August 2017

## WHERE

QUT Healthstream Swimming Pool

## TIME

9am – 4pm

## TICKETS

Drop-in, no booking required

## PRESENTED BY



QUT Student Marine Robotics, Robotics@QUT

## ADDITIONAL LINKS:

<https://www.qut.edu.au/science-engineering/about/news?news-id=110935>

# ROBOTIC ARM DEMONSTRATION

*RAWrobotics presents an interactive demonstration of their brand new robotic arm – Orion5*



Visitors will have the chance to see many Orion5 robotic arms performing an interesting collaborative task and also interact with unique 3D visualisation/simulation software to control a real robotic arm themselves.

As an educational robotics company in Brisbane, RAWrobotics' mission is to enable learning outcomes in robotics education to go above and beyond current standards. RAWrobotics are achieving this through the development of more capable and real-world relevant hardware, software, and much needed resources for educators. Orion5 is RAWrobotics' first production ready product; Orion5 puts features and principles from industrial and research grade robotic arms into an accessible package for education. Orion5 is designed for high school and university students and is currently being used at QUT by third-year mechatronics students.

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## WHEN

Sunday 20 August 2017

## WHERE

Outside Room 502, level 5, Science and Engineering Centre (P block)

## TIME

9am – 4pm

## TICKETS

Drop-in, no bookings required

## PRESENTED BY

RAWrobotics team



# SCENIC

*As part of the Voyages series, Scenic takes visual cues from Luna Park Melbourne's 105 year old Scenic Railway roller coaster and presents itself as a pair of walking legs, roaming freely outdoors.*



Purely mechanical, these legs embody the tight relationship between the original classic wooden roller-coaster and the audience that rides it.

This work will appear throughout the day alongside other roaming pieces by artists Cake Industries.

Scenic is part of Machination, an exhibition at QUT Art Museum..

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## WHEN

Sunday 20 August 2017

## WHERE

Roaming installation

## TIME

9am – 4pm

## TICKETS

No bookings required

## PRESENTED BY

Cake Industries (Jesse Stevens & Dean Petersen)

## ACKNOWLEDGEMENTS

This project has been assisted by the Australian Government through the Australia Council for the Arts, its arts funding and advisory body.



Our thanks to the staff of Luna Park Melbourne for their invaluable support of Voyages project.

# SCUTTLEBOT MAYHEM

*Save the ship before the Kraken awakes.*



Help us remotely command the movements of RepairBots to ensure the safe delivery of crates, full of essential supplies. The Robots are lost at sea but they are still connected to you via robotic floor trackers. You are their only hope, especially now that a mysterious creature from the deep ocean has returned to create chaos on the high seas.

Gather your friends and family and stop the ship from sinking. Using the virtual Control Zone as your base, players will rush to emergencies such as fires and leaks which are spreading across the ship. RepairBots will use remote sensors to follow your lead to locate and repair the damage. They cannot do it without you!

**Deb Polson** is a senior lecturer, researcher and designer at QUT, Creative Industries Faculty. Deb is focused on exploiting unique aspects of new technologies to prototype a better future for humans, animals and the environment.

Deb runs an experimental lab at QUT called HUB Studio employing recent graduates to create dynamic data simulations, games and virtual realities in collaboration with science experts and industry partners.

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## WHEN

Sunday 20 August 2017

## WHERE

Room 108, D block

## TIME

9am – 4pm

## TICKETS

Drop-in, no bookings required

## PRESENTED BY

QUT Creative Lab

## ACKNOWLEDGEMENTS

3D Artist – Wade Taylor

Programmer – Ryan Taylor

Sound Designer – Nathan Corporal

This project was funded by our friends at Wintergarden and ISPT.

Special thanks to Chris Gibbons, Sarah Nolan and Brendan Rosenstengel.

# SPACE FLIGHT

*Houston, we're going exploring!*



Launch your own spacecraft and venture to the far reaches of the solar system in the realistic 3D space flight simulator game, Orbiter.

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## WHEN

Sunday 20 August 2017

## WHERE

Room 505, level 5, Science and Engineering Centre (P block)

## TIME

9am – 4pm

## DURATION

5 – 10 minutes

## SUITABLE FOR

9+

## TICKETS

Drop-in, no bookings required

## PRESENTED BY

QUT STEM for Schools

# SPHERO OBSTACLE COURSE

*In this hands-on activity, children and families will be introduced to the basics of robotics using the technology behind the much beloved BB-8 robot: the Sphero SPRK+.*



This intelligent robotic ball connects wirelessly to the virtual world with mobile apps, enabling new types of game play that meld the virtual and real worlds. SPRK+ is far more than just a robot and we invite you to put them through their paces in a fun obstacle course.

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## **WHEN**

Sunday 20 August 2017

## **WHERE**

P Block Lawn, (opposite Goodwill Bridge entrance)

## **TIME**

9am – 4pm

## **TICKETS**

Drop in, no bookings required

# SUPER BOX WORLD

*Creative play for children and families!*



Super Box World is a strange dreamlike world where all sorts of robotic wobbling, rolling and moving things live. The world isn't finished though, and we need your creativity and imagination to make this dream a reality! Care for and add to roaming creatures, build new things, change dancing scenery – the choice is yours.

A robot hospital with friendly box attendants will be on hand to help you re-imagine this world, whilst everything bops along with the kooky DJ music.

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## **WHEN**

Sunday 20 August 2017

## **WHERE**

Lady Bowen Lawn, Old Government House

## **TIME**

9am – 4pm

## **TICKETS**

Drop in, no bookings required

## **PRESENTED BY**

Cake Industries (Jesse Stevens & Dean Petersen)

## **ACKNOWLEDGEMENTS**

Our special thanks to Valerie Berry & Benji Groenewegen for joining us

# TANK COMMANDER VR

*Experience an immersive video game and drive a remote control tank!*



Through VR, players become tank Commanders and drive around the real world to deliver vital intel to soldiers. Will you shovel coal into the furnace to keep up speed or go slow and steady – the choice is yours! Whatever you decide, the intel is only valid for so long and time is of the essence!

## WHEN

Sunday 20 August 2017

## WHERE

Room 314, level 3, O Block

## TIME

9am – 4pm

## SUITABLE FOR

10+

## TICKETS

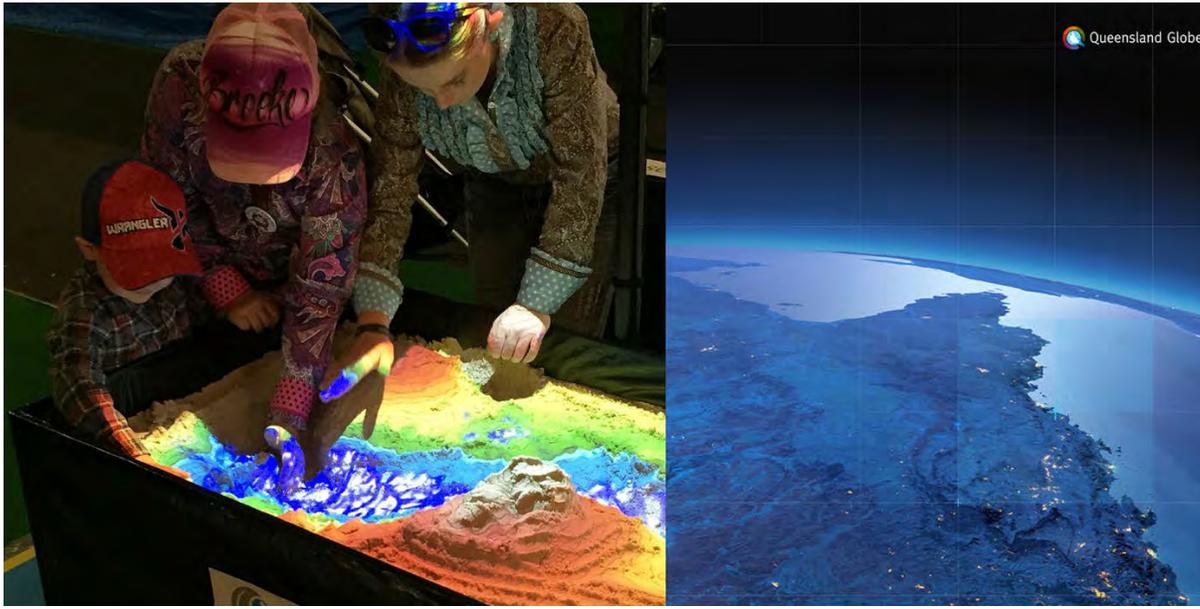
Drop-in, no booking required

## PRESENTED BY



# THE AR SANDPIT AND THE QUEENSLAND GLOBE

*Have fun with Arnie, QUT's AR (Augmented Reality) Sandpit!*



Using digital interactive software developed by QUT, join us to find out how nature and engineering maintains healthy landscapes, and creates our ever-important water supply. Dig, mold, and build-up the landscape to simulate mountains, fields, lakes, dams and rivers. Place objects to catch water, make it rain, and dry it up.

You will also have the opportunity to see The Queensland Globe, a digital interactive experience featuring Queensland's stunning satellite imagery and rich data about our great state. The Queensland Globe is presented at Robotronica by QUT and the Queensland Department of Natural Resources and Mines.

Please note: The Sandpit uses 100% non-toxic kinetic sand, containing synthetic polymers.

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## WHEN

Sunday 20 August 2017

## WHERE

V-Block Forecourt

## TIME

9am – 4pm

## TICKETS

Drop-in, no booking required

## PRESENTED BY



# THE HOSPITAL OF THE FUTURE

*Welcome to the hospital of the future.*



Come along to glimpse the future of medicine, where robots play a very important role – from surgical robots and robotic human simulators, to 3D printed body parts.

This display showcases the latest technologies in advanced 3D printing of replacement body parts, bionics, and surgical robotics. Here you will see one of our research-class biofabrication machines in action: using tens of thousands of volts and robotic precision to produce 3D plastic scaffolds out of fibres much thinner than a human hair. [here](#).

## **Bios**

**Professor Mia Woodruff** leads the Biofabrication and Tissue Morphology Group at QUT and has held both an ARC Postdoctoral Fellowship and a QUT Vice Chancellor's Senior Research Fellowship. She is an expert in bone tissue engineering with extensive experience in all aspects of biomaterial scaffold fabrication techniques and pre-clinical models and has built a world-leading histology laboratory since joining QUT. Mia was awarded second place (highly commended) as Queensland's Women in Technology "Rising Star" in 2012 and nominated for the Biotech researcher award in 2013. She was also the winner of the Queensland Young Tall Poppy Science Award in 2013 and last year was recognised in QWeekend's Queensland 50 Best and Brightest. Mia's exciting vision is of a future where the fabrication of patient-specific replacement tissue and organs is safe, cost-effective and routine. This dream drives her fascinating research to advance the high-tech sciences of tissue engineering and biofabrication. Mia is leading the creation of the Herston Biofabrication Institute, a partnership between QUT and Metro North Hospital and Health Service.

**Dr Sean Powell** is an academic and researcher in biofabrication and tissue engineering at the Queensland University of Technology (QUT). His research experience includes developing theoretical and computational models of particle transport, molecular diffusion and experimental nuclear magnetic resonance. Sean also has extensive industry experience in computer software and electronic hardware design. He currently works with the Biomaterials and Tissue

Morphology research group leading the biofabrication team to develop next-generation technologies and techniques for 3D micron-fibre based polymer scaffold fabrication. Sean also lectures undergraduate physics at all year levels with a special interest in astrophysics.

**Mr Christopher Aitken** trained at St Vincent's Hospital in Melbourne and has extensive experience in critical care and post op cardio thoracic surgery in Australia and the UK. His previous positions were managing and educating for a wide range of clinical healthcare products including high fidelity human patient simulators. Chris is currently the Clinical and Simulated Learning Environments Coordinator at QUT in the Faculty of Health. He has a particular interest in healthcare simulation paradigm, envisioning the enhancement of undergraduate, postgraduate and research in clinical and simulated learning environments at QUT.

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## **WHEN**

Sunday 20 August 2017

## **WHERE**

Rooms 413 & 413A, level 4, Science and Engineering Centre (P block)

## **TIME**

9am – 4pm

## **TICKETS**

Drop-in, no bookings required

## **PRESENTED BY**

Professor Mia Woodruff

Mr Christopher Aitken

## **ACKNOWLEDGEMENTS**

Biofabrication and Tissue Morphology research group

Stryker Mako Robotic-Arm Assisted Surgery team

# THE REDBACK GARRISON 501ST LEGION



The 501st Legion is an all-volunteer organization formed for the express purpose of bringing together costume enthusiasts under a collective identity within which to operate. The Legion seeks to promote interest in Star Wars through the building and wearing of quality costumes, and to facilitate the use of these costumes for Star Wars-related events as well as contributions to the local community through costumed charity and volunteer work.

With over 10,000 members worldwide, they are the world's largest costuming club. The Redback Garrison is comprised of over 160 501st Legion members based in Queensland. As well as creating some of the highest quality Star Wars costumes in the world, the Redbacks also attend many events and devote themselves to supporting a number of charities throughout the state. Most importantly, they enjoy bringing smiles to those who most need it – they are the Bad Guys doing good!

*The 501st Legion is a worldwide Star Wars costuming organization comprised of and operated by Star Wars fans. While it is not sponsored by Lucasfilm Ltd., it is Lucasfilm's preferred Imperial costuming group.*

*Star Wars, its characters, costumes, and all associated items are the intellectual property of Lucasfilm. © & ™ Lucasfilm Ltd. All rights reserved. Used under authorization.*

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## WHEN

Sunday 20 August 2017

## WHERE

Roaming

## TIME

9am – 4pm

## TICKETS

No bookings required

## PRESENTED BY

Redback Garrison 501st Legion

# MOTORSPORTS OF THE FUTURE

*Come and see QUT Motorsport's race cars of the future!*



QUT Motorsport are a group of QUT (Engineering, Film and Business) students who share a common interest – race cars. Using knowledge from each discipline, they are honing their skills to design and race their very own electric race car! Each year the goal is to take part in Formula SAE Australasia, competing against 30+ local and international teams from the Asia Pacific region.

You'll also have the opportunity to try out the Formula 1 simulator.

---

## ACKNOWLEDGEMENTS



## WHEN

Sunday 20 August 2017

## WHERE

Kidney Lawn, Old Government House, (Botanic Gardens side of House) and QUT Motorsport Lab, room 120, O block

## TIME

9am – 4pm

## TICKETS

Drop-in, no bookings required

## PRESENTED BY



# ROBOTRONICA HIVE

*Want to capture your experience of Robotronica and have it shown on The Cube? Just download HIVE to your smartphone and get filming!*



HIVE is an ongoing artistic research experiment developed by Ars Electronica and QUT for collecting and contextualizing video content. It is a cross-media system for crowdsourced video documentation. Here's how you can get involved:

- Download the app from your device's App Store - simply search for "Robotronica HIVE"
- Make your own hive by entering a personal tag in the app
- Film your favorite parts of Robotronica, and don't forget to tag them!
- View your tagged videos on The Cube or Robotronica HIVE website.

---

## WHEN

Sunday 20 August 2017

## WHERE

The Cube, Science and Engineering Building (P block)

## TIME

9am – 4pm

## TICKETS

Drop-in, no bookings required

## PRESENTED BY



# VIRTUALLY DISCOVER QUT IN 360

*Come and enjoy QUT's 3D-interactive experience!*



QUT's virtual reality portal [www.qut.edu.au/vr](http://www.qut.edu.au/vr) houses a growing library of VR and 360° content to provide you with a totally immersive experience bringing QUT's incredible research, people and spaces to life.

Once you have experienced QUT in 360°, the QUT cardboard headsets are yours for keeps!.

---

## **WHEN**

Sunday 20 August 2017

## **WHERE**

Outside D Block

## **TIME**

9am – 4pm

## **TICKETS**

Drop-in, no bookings required

## **PRESENTED BY**

QUT Marketing and Communication

# WHO ARE THESE ROBOTS?

*Can you tell the difference between human and robot?*



Who are these Robots is the story of one of Brisbane's great robotics companies. They will be launching their new prototype demonstrating the company's innovation in cutting edge humanoid robotics. Synthetic Life Technology founder Arthur Brampston, will share with you the company's evolution from hungry start-up and its first ventures in AI, through to recent successes and finally unveil their latest ground-breaking prototype.

Who are these Robots is brought to you by Brisbane-based dance crew who are at the cutting edge of humanoid robotics.

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## **WHEN**

Sunday 20 August 2017

## **WHERE**

Roaming

## **STAGE SHOW**

East Lawn, between P and Y block, Outside Science and Engineering Centre

## **TIME**

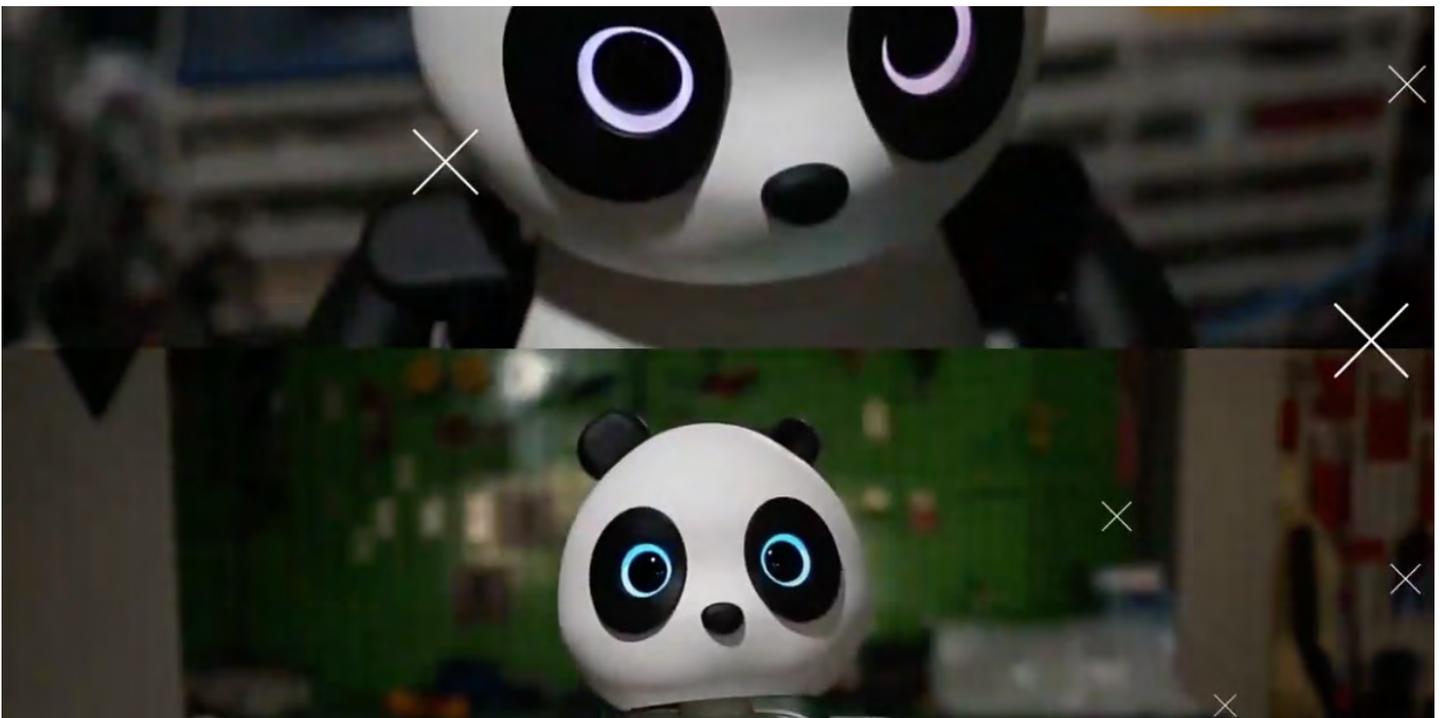
9:45am, 11:15am, 12:45pm, 2:15pm

## **PRESENTED BY**

Who Are These Robots

# WHY FUTURE STILL NEEDS US: AI AND HUMANITY

*At a time when we are seriously considering a not too distant future when artificial intelligence will overtake human intelligence, Why future still needs us: AI and humanity offers a creative window into the world of AI, exploring an alignment between humans, creativity and the machine.*



AI already is able to draw pictures, compose music, write novels, and even produce movies. It can learn and think by repeating the process of analysis, classification, reasoning, prediction, and regression. Artists in this exhibition explore AI as both a creator and an amplified collaborator, raising questions about humanity in a future machine age.

## Artists

- Harshit AGRAWAL
- Jean-Baptiste BARRIERE
- Maurice BENAYOUN
- Terence BROAD
- Nabi E.I.Lab
- Shinseungback Kimyonghun
- Tobias KLEIN
- Gene KOGAN
- Golan LEVIN

- Kyle MCDONALD
- Minha YANG
- David NEWBURY
- Andreas REFSGAARD

### Image

Nabi E.I. Lab

*Robo-Panda* 2016

resin, acrylic, smartphone, 9 servo-motors, microcontroller

Courtesy Nabi E.I. Lab.

---

### WHEN

Sunday 20 August 2017

### WHERE

QUT Art Museum

### TIME

9am – 4pm

### SUITABLE FOR

13+

### TICKETS

Drop-in, no bookings required

### PRESENTED BY

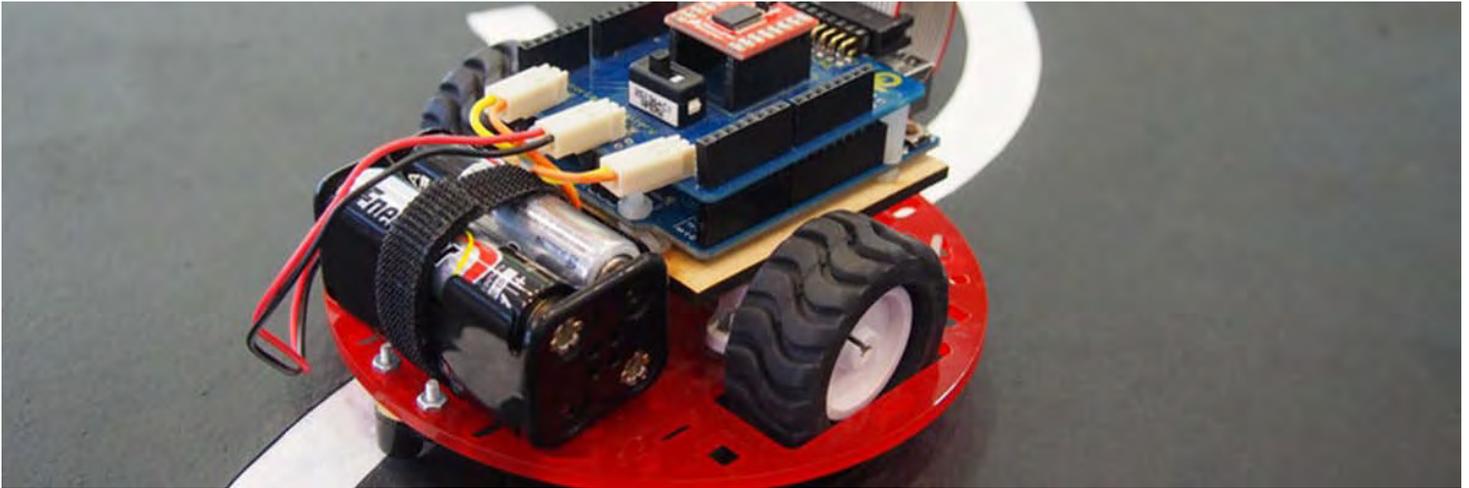


### ACKNOWLEDGEMENTS

This project is supported by the Australian Government through the Australia-Korea Foundation of the Department of Foreign Affairs and Trade.

# CARS OF THE FUTURE

*The driverless future has arrived, with companies such as Ford, Volkswagon, Volvo, BMW and NuTonomy putting driverless cars on the road as soon as 2018.*



This beginner to intermediate level workshop introduces students to the basics of programming logic and processes, but also extends to navigating a driverless Arduino car around a track. You will learn computational modelling methods to control digital and analogue inputs and outputs along with sensors to plan the behaviour of the car along the route.

Visitors can compete for the quickest time around the circuit and for the fastest straight line speed.

---

## **WHEN**

Sunday 20 August 2017

## **WHERE**

Room 502, level 5, Science and Engineering Centre (P block)

## **TIME**

9am, 11am, 1pm, 3pm

## **DURATION**

90 Minutes

## **SUITABLE FOR**

11+

## **PRESENTED BY**

QUT STEM for Schools

# SOCIAL ROBOT STUDY WITH PEPPER

*Pepper is the world's first personal humanoid robot that can recognise emotions, created by [SoftBank Robotics](#).*



Join us for an interactive presentation from the Australian Centre of Excellence in Robotic Vision and learn how a social robot like Pepper moves around and interacts with people. You will have the opportunity to see a projection of the world through Pepper's eyes and find out the challenges for a robot finding its way around an unknown environment using computer vision and depth sensors.

QUT is Australia's first university to use Pepper specifically for a social robotics research platform, complementing the State Government's strategy to explore the potential for humanoid robots and through a Proof of Concept (POC) activity in partnership with ST Solutions Australia (a subsidiary of SoftBank Corp.).

---

## WHEN

Sunday 20 August 2017

## WHERE

The Atrium, level 6, Science and Engineering Centre (P block)

## TIME

9am, 10am, 11am, 12pm, 1pm, 2pm, 3pm

## TICKETS

Drop-in, no bookings required

## PRESENTED BY

Australian Centre of Excellence in Robotic Vision

## ACKNOWLEDGEMENTS

State of Queensland acting through the Department of Science, Information Technology and Innovation

ST Solutions Australia

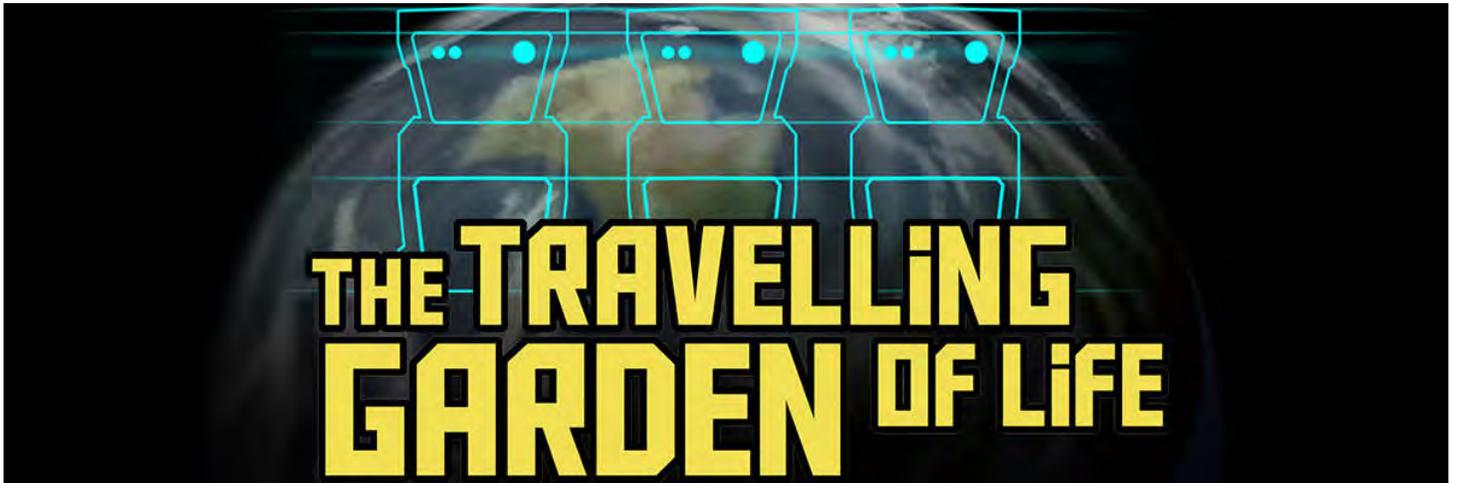


Additional Links:

<https://www.qut.edu.au/news?news-id=117786>

# THE TRAVELLING GARDEN OF LIFE

*The very near future. Earth is almost uninhabitable. Plants are withering and the only hope is that in time the world cools down again, the radiation reduces and the few remaining humans stop fighting.*



A band of concerned scientists have created a space station that orbits the Earth containing a seed bank and a preservation garden, maintained by robots. They dream that once Earth is ready for them, they will fly down to the land and replant. But the future of the garden is threatened. An unseen intruder has been plotting, and is now attempting to hack into the space station and take control.

Please note: Parents must supervise children at all times and ensure they do not enter the performance area.

## ACKNOWLEDGEMENTS

- Co-Producer – Andy Arthurs
- Co-Producer – Jared Donovan
- Co-Producer – Jonathan Roberts
- Choreographer (Captain Tanza) – Steph Hutchison
- Composer / eMusician (Tonmeister) – Yanto Browning
- Lighting Designer – George Meijer
- Dramaturg & Voice-Over – Paul Makeham
- Electrician & Technical A/V Operator – Liam Gilliland
- Video/Documentation – Jake Malpass
- Opening Sequence – Joe Carter
- Poster Art – Nicholas St Helier
- Poster Text – Diane Roberts
- Theatre Production Manager – Anthony Whittaker
- Robot Engineering and Design – David Hedger
- Robot Tracking – Rob Patterson
- Robot Movement – Chloé Fas

- Robot Builders – Marisa Bucolo, Jack Wright, Chris Taylor, Ahmed Khaled, Mohamed Bekhit Sewify, Chris Dirkis, Georgina Hine, Lachlan Gordon, Rhys Davies, Liao Wu, Ian Ashworth, Haidar Obeid, Hassan Adel Al-Hussain
  - Robot Controllers – Ayrton Fernandes, John Board
  - Drone Pilots – Daniel Pearson, Joshua Romero
  - Set Creation – Liz Graham, Anjali Jaiprakash, Clare Lah, Hannah Donovan, Rachel Donovan
  - Stasis Pod Scanning – Kelly Greenop
  - Concept Development Assistant – Craig Waddell
- 

## **WHEN**

Sunday 20 August 2017

## **WHERE**

Gardens Theatre Rehearsal space, Access via the stage door of Gardens Theatre

## **TIME**

9am, 10am, 11am, 12pm, 1pm, 2pm, 3pm

## **DURATION**

30 minutes

Additional links:

<https://theconversation.com/how-to-backup-life-on-earth-ahead-of-any-doomsday-event-79271>

# ME/YOU/US + AI

*Artificial intelligence is inspired by human experience.*



But how might we create smart machines that are inspired by diverse human perspectives? How can AI and smart machines help humans to better understand each other's differences? Each other's physical and intellectual differences, and our different understandings and experience of life? This lab encourages you to explore this by 'coding' your body (and others) to perform a series of interactive, collaborative, and highly playful instructions, using lo-fi and low-tech materials. Get ready to transform into smart machines.

This workshop has been developed by the QUT Guerrilla Knowledge Unit (GKU), an educational plug-in to the Ars Electronica Futurelab Academy. The 2017 GKU team is led by Jacina Leong and Linda Knight, and includes pre-service teachers Jess Martin, Dee Armstrong, and Xue Ning Lee, from the QUT Faculty of Education. This workshop will be presented at the Ars Electronica Festival u19 – CREATE YOUR WORLD program, Austria, in September 2017.

*Image by Savannah van der Niet. Courtesy QUT Precincts.*

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## WHEN

Sunday 20 August 2017

## WHERE

Room 310, level 3, V block

## TIME

9am – 1pm

## TICKETS

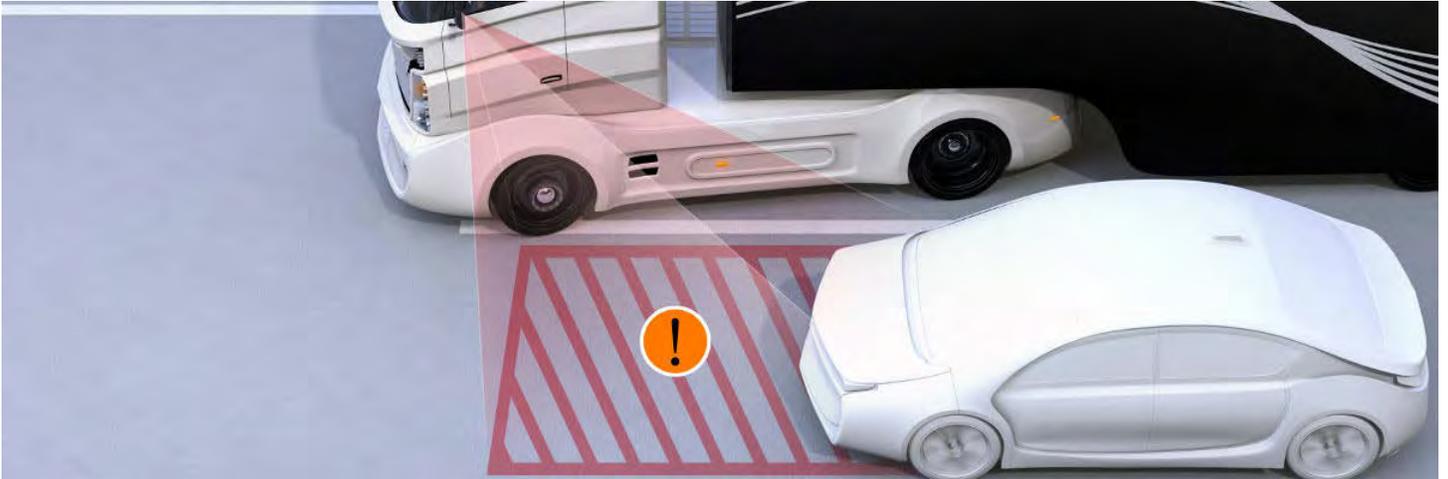
Drop-in, no bookings required

## PRESENTED BY

Guerrilla Knowledge Unit, a plug-in to the Ars Electronica Futurelab Academy

# SELF-DRIVING CARS – MAKING AN ETHICAL CHOICE

*This interactive demonstration uses a miniature autonomous car powered by robotic vision algorithms to investigate the challenging ethical problems faced by self-driving cars.*



Audience members get involved by making "life-saving" decisions in several mock scenarios similar to that of the infamous trolley ethics problem (who should you hit with the car?). Additionally, the demonstration will provide information surrounding the many technical challenges facing self-driving technologies and help provide insight into what we may see in the near future.

## Bios

**James Mount** is a current PhD Student with the Australian Centre for Robotic Vision at the Queensland University of Technology. His research involves developing computer vision algorithms which will allow autonomous robots to determine where they are in the world at any time and in any weather conditions, this will be paramount for technologies such as self-driving cars. James is also passionate about improving STEM education and his research position within the ACRV allows him to combine his passion for technology, education and entrepreneurship. James was also the recipient of the prestigious Kindler Memorial Medal and holds an Honours Degree in Mechatronics Engineering.

**Professor Michael Milford** is a leading robotics researcher conducting interdisciplinary research at the boundary between robotics, neuroscience and computer vision, and a multi-award winning educational entrepreneur. His research models the neural mechanisms in the brain underlying tasks like navigation and perception in order to develop new technologies, with a particular emphasis on challenging application domains where current techniques fail such as all-weather, anytime positioning for autonomous vehicles. He currently holds the position of Professor at QUT, as well as Australian Research Council Future Fellow, Microsoft Research Faculty Fellow and Chief Investigator on the Australian Centre for Robotic Vision.

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**WHEN**

Sunday 20 August 2017

**WHERE**

The Atrium, level 6, Science and Engineering Centre (P block)

**TIME**

9.30am, 10.30am, 11.30am, 12.30pm, 1.30pm, 2.30pm, 3.30pm

**DURATION**

10 – 15 minutes

**TICKETS**

Drop-in, no bookings required

**PRESENTED BY**

ACRV Research: James Mount (PhD Student), Jordan Simpson (QUT Graduate), Michael Milford (Professor)

**ACKNOWLEDGEMENTS**

RAS Discipline and ACRV for providing the required funding to develop the autonomous RC platform.

# ROBOGALS

*Experience engineering and get a taste for programming with Robogals.*



In this hands-on workshop, you will build your robot before sending it off to complete a number of challenges.

Robogals is student-run, international not-for-profit aimed at getting more girls interested in careers in STEM-related fields and decreasing gender bias within the industry. Robogals' UQ chapter works towards this goal by delivering fun and engaging workshops at schools, libraries and other venues. These workshops require participants to employ a range of technical skills to solve engineering challenges, whilst also developing soft skills such as communication and teamwork among the small groups they work in.

---

## WHEN

Sunday 20 August 2017

## WHERE

Room 504, level 5, Science and Engineering Centre (P block)

## TIME

9:30am, 12pm, 2pm

## DURATION

110 minutes

## SUITABLE FOR

10+

## PRESENTED BY



# 1:1

*This project is the world premier of a new performance work about the relationship between a human and a robot camera.*



How they grow to be able to imagine each other's complexity, seeing each other on a 1:1 scale. Incorporating elements of dance, theatre and new technology, this work resides at an interstice between human and other.

## PRESENTED BY

- Artists – Jacob Watton (Performer), Briony Law, Jaymis Loveday
- Cinema Swarm Inventor – Jaymis Loveday
- Programmer – Charles Henden
- Producer – Lincoln Savage
- Assistant Producer – Quinty Pinxit-Gregg
- Researcher – Nicole Robinson
- Dramaturg – Kathryn Kelly

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## WHEN

Sunday 20 August 2017

## WHERE

Room Three Sixty, level 10, Y Block

## TIME

9:30am, 11am

## DURATION

25 minutes

## SUITABILITY

10+

## TICKETS

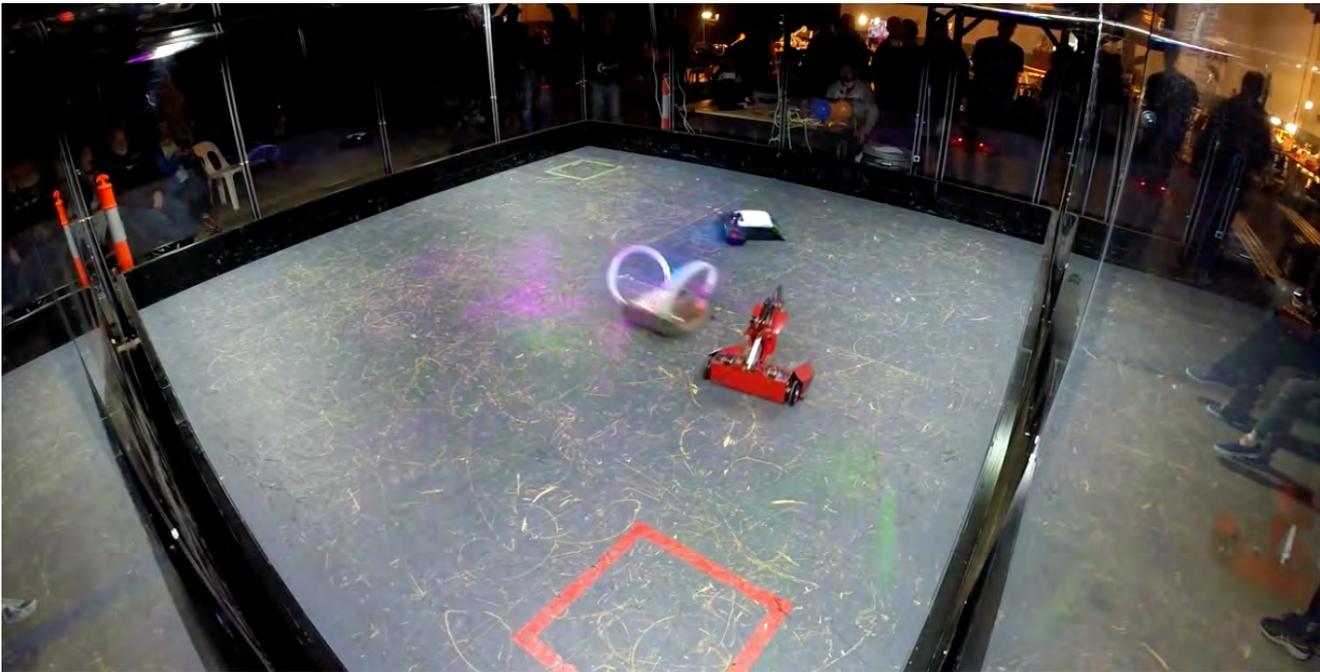
Drop-in, no bookings required

## ACKNOWLEDGEMENTS

The 1:1 project acknowledges major contributions by the Ars Electronica Futurelab Academy at QUT - Kristefan Minski, Lubi Thomas, Steph Hutchison, Greg Jenkins, and Matthew Strachan. We also acknowledge the fundamental roles of Robotronica, Ars Electronica, The Australian Council for the Arts and QUT Creative Lab

# 2017 AUSTRALIAN ROBOWARS CHAMPIONSHIP

*Australia's best combat robots will travel to Robotronica to fight it out for the Australian Championship.*



This will be the biggest robot combat competition in Australia with robots travelling from all over the country to compete. Robot fighting enthusiasts will battle it out aiming to become the Robowars Champion. These robots are strong and brutal – be prepared for lots of destruction!

*The 2017 Champion was Jake Anderson with NC and the Runner up was Glen with Obliterator.*

[View complete Robowars draw details.](#)

---

## WHEN

Saturday 19 August, Sunday 20 August 2017

## WHERE

Gardens Theatre

## TICKETS

General: Free, VIP\*: \$35 (entitles you to backstage access and priority seating)

## DURATION

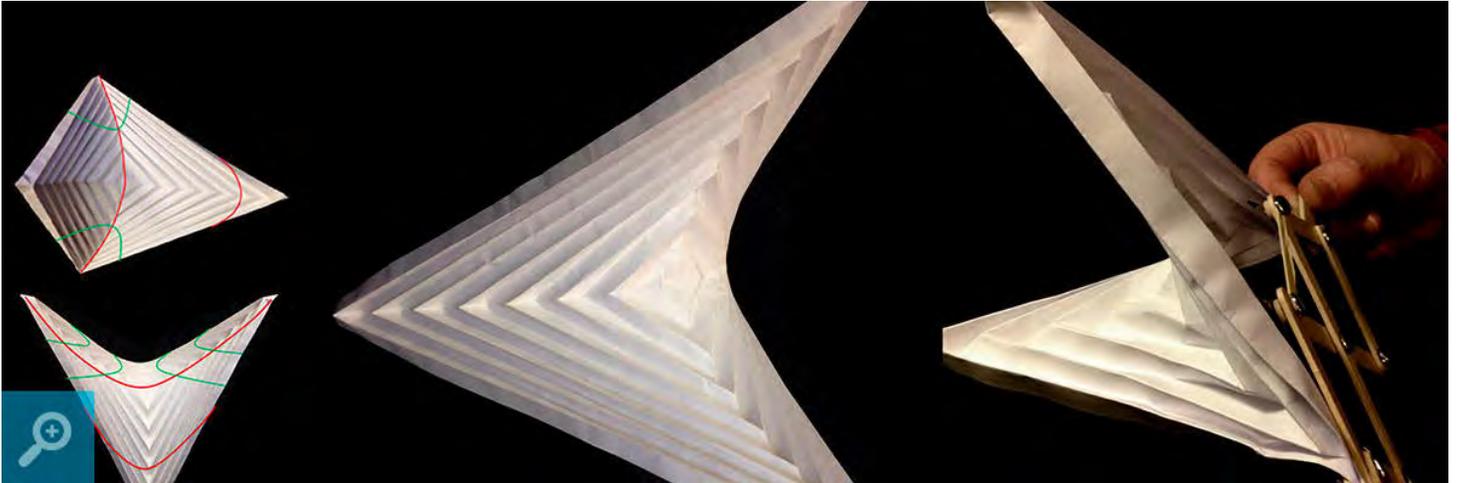
Event runs for 70 minutes

## PRESENTED BY

Queensland Robotics Sports Club & [Robowars Australia](#)

# HUNGRY BIRDS

*Paper engineering meets mechanical movement in this unique math-making experience!*



Explore the mathematics of curves before folding a paper hyperbolic paraboloid to visualise a flock of hungry birds. [STEAMpop](#)'s 'flat to form' experience allows your thinking hands to transform 2D to 3D incorporating metaphor and movement. See how complex mathematical concepts can create simple pleasures in making and moving.

---

## WHEN

Sunday 20 August 2017

## WHERE

Room D106, level 1, D block

## TIME

10am, 11am, 12noon, 1pm, 2pm, 3pm

## DURATION

45 minutes

## SUITABLE FOR

10+

## PRESENTED BY

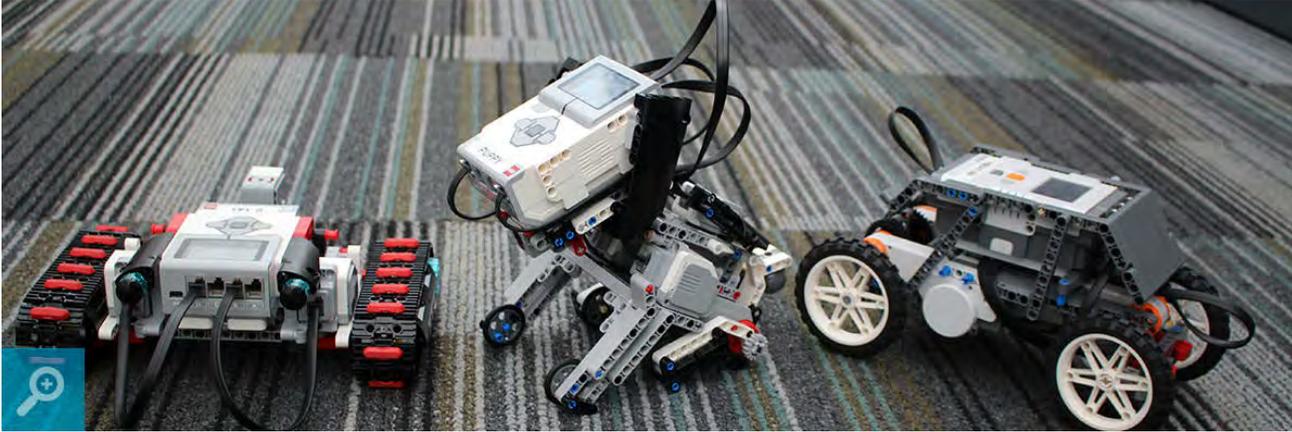


## SUPPORTED BY



# ROBOT PLAY ZONE

*Children and families are invited to join in the fun to explore robotics in education.*



Robotics@QUT introduces children to the wide possibilities of robotics: from driving remote control robots, to drawing with creative robots, and using sensors to complete fun challenges.

The Robotics@QUT Widening Participation Program is a joint Faculty of Education and QUT Equity Services program, delivering engaging STEM learning experiences through hands-on robotics activities for students and teachers. The program supports pre- and in-service teacher STEM education and builds school students' aspirations to pursue an education in STEM areas.

---

## WHEN

Sunday 20 August 2017

## WHERE

Rooms 506 & 506A, level 5, Science and Engineering Centre (P block)

## TIME

10am – 3pm

## SUITABLE FOR

Children aged 4 – 10 and their families

## TICKETS

Drop-in, no bookings required

## PRESENTED BY

Robotics@QUT

## ACKNOWLEDGEMENTS

Robotics@QUT is a joint QUT Faculty of Education and QUT Equity Services widening participation program

Additional links:

<https://www.qut.edu.au/news?news-id=108297>

# ROBOT SUMO

*Learn to drive sumo robots and battle your friends!*



QUT's Electrical Engineering Student Society will be running robot sumo tournaments so you can test your skills and battle against others. You will also have the opportunity to check out the club's latest interactive projects, including the 3D/CNC printer electronics controller board, Hurricane.

---

## WHEN

Sunday 20 August 2017

## WHERE

D Block

## TIME

10am, 11am, 12pm, 1pm, 2pm, 3pm

## DURATION

45 minutes

## TICKETS

Drop-in, no bookings required

## PRESENTED BY

QUT Electrical Engineering Student Society

# PROSTHETIC LEG CHALLENGE

*QUT's Engineers Without Borders and Fellowship of Medical Engineers present a workshop like no other.*



You will work with a team of five to build a prosthetic leg with recycled materials, designing and sculpting a prosthetic leg of the future! Each workshop will end with a showcase and race to test the legs' durability, aesthetics and design. The workshop also includes an introduction to engineering, its role in appropriate technologies and how it has impacted human development.

---

## WHEN

Sunday 20 August 2017

## WHERE

The Terrace, level 6, Science and Engineering Centre (P block)

## TIME

10am, 11:30am, 1pm, 2:30pm

## DURATION

60 minutes

## SUITABLE FOR

8+

## PRESENTED BY



& Fellowship of Medical Engineers

# ROBOT STORYTIME

*Experience the magic of storytime with Brisbane Libraries' NAO robots.*



Brisbane libraries First 5 Forever will facilitate interactive stories about robots, sing songs and provide mark making activities for young children.

Special book readings and signings by Andrew King, author of the Engibear series, at 12pm and 1pm. Books will be available to purchase from 11:30am.

**Andrew King** is a Brisbane based consulting engineer with qualifications in Chemical and Environmental Engineering. He is passionate about the integral role of engineering in environmental management and sustainability and is a Climate Reality Leader. Children are very interested in the things that engineers do yet there are very few engineers in children's literature. Consequently, Engibear and his friends Engilina and the Bearbot were created as a "friendly faces" of engineering – a way to introduce engineering to young children.

---

## WHEN

Sunday 20 August 2017

## WHERE

Drawing Room, Old Government House

## TIME

10am, 11am, 12pm, 1pm, 2pm

## DURATION

30 minutes

## TICKETS

Drop-in, no bookings required

## PRESENTED BY

Brisbane City Council Libraries

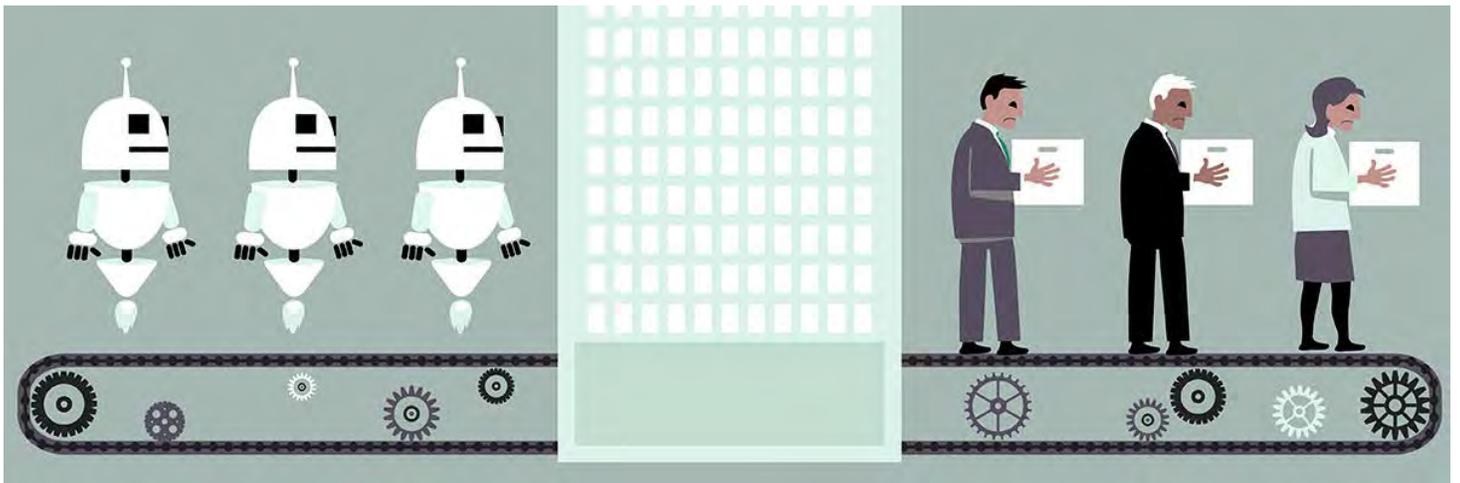
## ACKNOWLEDGEMENTS

First 5 Forever is an initiative of the Queensland Government and the State Library of Queensland



# RISE OF THE ROBOTS, RISE OF THE USELESS CLASS

*What does the future look like amongst a rising robot population?*



Most jobs that exist today might disappear to automation within decades, raising concerns about mass human unemployment, the need for universal basic income, and purposeful activities to occupy the so-called 'useless' class. But is there any truth to these concerns and how should society respond?

Professor Michael Milford (QUT) is joined by panelists Jon Carroll (Sphero), Andra Keay (Silicon Valley Robotics), and Tom Bijesse (Code Club Australia), as they explore how education and vocational sectors can prepare society for a rising robot population.

## BIOS

**Professor Michael Milford** is a leading robotics researcher conducting interdisciplinary research at the boundary between robotics, neuroscience and computer vision, and a multi-award winning educational entrepreneur. His research models the neural mechanisms in the brain underlying tasks like navigation and perception in order to develop new technologies, with a particular emphasis on challenging application domains where current techniques fail such as all-weather, anytime positioning for autonomous vehicles. He currently holds the position of Professor at QUT, as well as Australian Research Council Future Fellow, Microsoft Research Faculty Fellow and Chief Investigator on the Australian Centre for Robotic Vision.

**Jon Carroll** was one of the first employees to join Sphero in May 2011 and helped bring the original Sphero product to market the next year. He led the development of the original Sphero app experiences including the Sphero app, Chromo, Golf, Draw & Drive, Exile, Sharky the Beaver, The Rolling Dead and many more.

Jon worked with the firmware team to create Macros and MacroLab which went onto become what is now the Sphero EDU program. He created or defined many of the underlying technologies that power Sphero products today including API commands, firmware updating, macros, augmented reality, SDK, build systems and is named as an inventor on many of Sphero's key patents.

Jon helped bring BB-8 to life and was the one that created the holographic messaging feature. Jon is currently the Director of Prototyping at Sphero where he leads a team to develop and test future product concepts as well as do R&D on future technology

**Andra Keay** is the Managing Director of Silicon Valley Robotics, non-profit industry group supporting innovation and commercialization of robotics technologies. Andra is also founder of the Robot Launch global startup competition and a mentor and advisor to startups, accelerators and think tanks, with a strong interest in commercializing socially positive robotics and AI.

Andra cofounded Robohub, the global robotics research news site, building on her background in film, television and media production, internet and computing technologies, with degrees in Interaction, Communication and Human/Robot Cultural Studies. Andra also cofounded Robot Garden, a robotics makerspace and teaches Interaction Design and Theory. Andra has a particular interest in understanding diversity and representation in robotics and AI and started the Women in Robotics community. Andra speaks regularly to international audiences on robotics/AI ethics, innovation, commercialization and interaction.

**Tom Bijesse** is an experienced computer science teacher, Education Manager and Curriculum Developer who comes to Australia after five years of experience with the EdTech community in New York. As Education Specialist at Code Club he is managing ways in which teachers, volunteers and corporate partners can bring effective computer science and robotics education access to all students.

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## **WHEN**

Sunday 20 August 2017

## **WHERE**

Room 401, level 4, Z block

## **TIME**

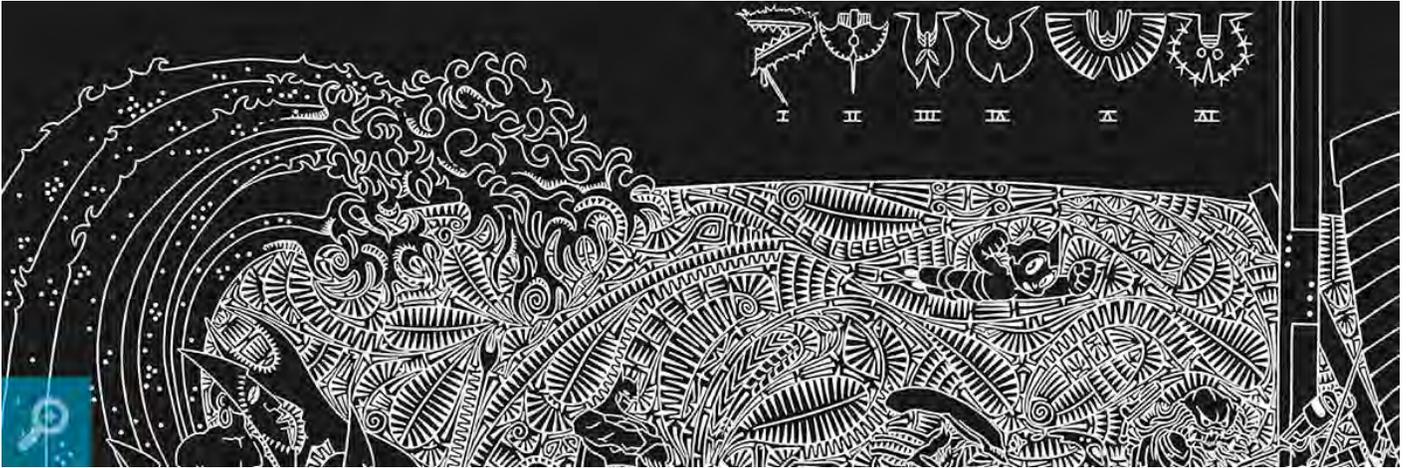
10 – 11am

## **DURATION**

60 minutes

# OLD WAYS, NEW: TECH

*How might Indigenous Knowledge Systems offer a possible paradigm shift for the advancement of new technologies?*



There is a growing awareness that technological systems and the algorithms that power them are mono-cultural. Engaging diverse perspectives ensures that technological systems are more dynamic and accessible to a wider range of people. What can be learned from Indigenous Knowledge Systems, and how might Indigenous and Western ways of knowing work together to inform how we respond to and optimise technological advancements.

Old Ways, New is a group of Indigenous consultants and technologists, creating a new digital world and we are delighted to welcome their CEO and Founder Andie Abdilla, as a panelist. Joining her on the panel are Associate Professor Rob Fitch (University of Technology Sydney) and Wayne Denning (Carbon Creative), in conversation with Rae Johnston (SBS, Gizmodo), as they discuss links between Indigenous and Western Knowledge Systems, and some of the challenges and opportunities for these types of collaborations across research, industry, education, and society.

## BIOS

**Angie Abdilla** (Trawlwoolway) is the Founder and CEO of Old Ways, New. As a consultant and creative technologist, Angie works across digital product development, policy, strategy and research in Robotics, AI, VR and AR and 'Futuring' studies. She has presented her work on the Ethical Digitisation of Indigenous Culture at the United Nations and continues to advocate for Indigenous peoples, human and technology rights internationally through policy within the UN and Private sector. Previously, she was known as an acclaimed film Director for her immersive film and cross-disciplinary arts works and continues to utilise the craft of storytelling as the central component to all her work.

**Associate Professor Rob Fitch** is a leading research scientist in the area of autonomous field robotics. He is interested in systems of outdoor robots and their application to key problems in agriculture, environmental monitoring, and defence. Robert received his PhD in computer science from Dartmouth (USA) and worked as a Senior Research Fellow with the Australian Centre for Field Robotics (ACFR) at The University of Sydney before joining the University of Technology Sydney. He has led research in planning and collaborative decision-making for ground, underwater, and aerial robots in a variety of government and industry sponsored projects including those in broad-acre agriculture, underwater glider navigation, tracking endangered wildlife, and commercial aviation. Robert is passionate about robotics

education and training, is co-chair of the IEEE Technical Committee on Multi-Robot Systems, and is co-founder of the International Symposium on Multi-Robot and Multi-Agent Systems.

**Wayne Denning.** In 2006 Wayne Denning, Managing Director and proud Birri Gubba man left a successful career in Federal Government to form Carbon Creative, a full service creative agency with a difference.

Determined to give a positive voice to Indigenous Australians, Wayne set about creating innovative engaging design, content and strategy for children's television and within the corporate arena and hasn't looked back.

Over a decade on, Carbon Creative has evolved. Today and every day Carbon helps shape and share stories and ideas, not only for our First Australians but for a diverse audience from the mainstream to the marginalised. Carbon takes great pride in our authentic, creative and strategic approach to whatever the challenge.

Beyond the creative agency, Wayne (and his team) ethos remains anchored in social change, steering him to seek out the ordinary in the extraordinary, attempting and being brave enough to tip things on their head. From this position, Wayne made a commitment to ensure Aboriginal and Torres Strait Islander children and young people, like their forebearers are inspired and motivated to be part of and explore STEM related fields, hence the STEM.I.AM initiative.

Wayne embraces his role as the Deputy Chair of the National Film and Sound Archive of Australia, and as a Board Director of the Queensland Theatre.

He is a Digital Ambassador for Queensland and a member of the Queensland Governments Aboriginal and Torres Strait Islander Business and Innovation Reference Group. Wayne is also on the Community Leader Roundtable: Engagement Plan for the Domestic and Family Violence Prevention Strategy.

**Rae Johnston** is a journalist at Gizmodo Australia, focusing on science, technology, video games and pop culture. Host of NITV's The Point, Rae also regularly hosts The Feed and Small Business Secrets on SBS. You may have seen Rae on The Project, Today, Sunrise, Today Tonight, Lateline, Good Game and major news programs chatting all things tech. You can also hear Rae on Triple J, ABC Radio National and 2UE.

Rae tours the country hosting and speaking at pop culture, technology, science and video game conventions and events. Geek Mum to a teenage Padawan, and a proud Wiradjuri woman from Kalari clan in Cowra, NSW, Rae is a passionate ambassador for the positive benefits of technology.

## IMAGE

Brian Robinson

*As the rains fell and the seas rose* 2011

linocut

QUT Art Collection

Purchased 2011

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## WHEN

Sunday 20 August 2017

## WHERE

Room 514, level 5, Science and Engineering Centre (P block)

## TIME

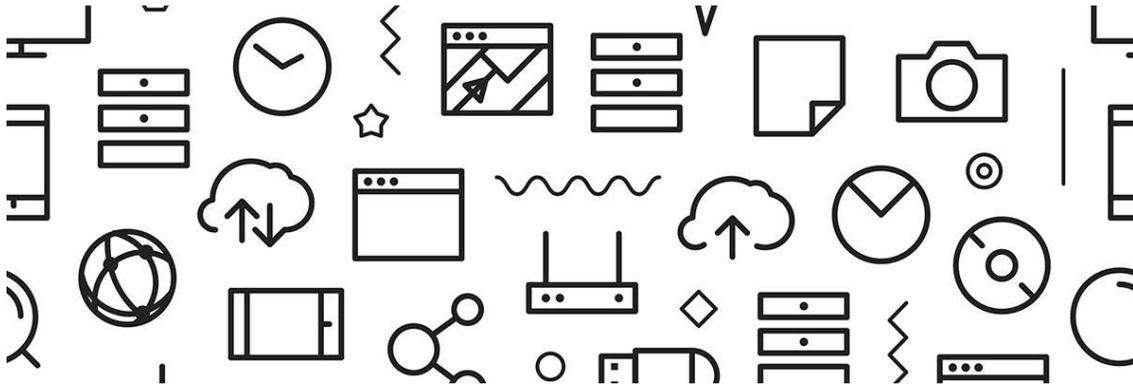
10.15 – 11.15am

## DURATION

60 minutes

# TECHTALKS

*TechTalks is a series of 30-minute dives into the world of technology, featuring emerging and established experts in diverse fields, discussing and demonstrating cutting edge developments.*



FOLKTALE is a creative marketplace that connects brands to customers and a community of mobile-enabled content makers to co-create authentic brand stories through video. Meet CEO and co-founder, Sarah Mak, and discover how to start filming amazing video content! (Session from 11 – 11.30am only.)

PLUS is a fun finding life organiser that connects people to their interests that helps you and your friends figure out what to do next. It allows for take overs from places and events that people love - with opt in, geo based and timely relevant content. Meet co-founder, Dylan Verrier, and discover how Plus will change your social life! (Session from 12 – 12.30pm only.)

SPHERO's Director of Prototypes, Jon Carroll, introduces Sphero's newest developments: Disney Pixar's Ultimate Lightning McQueen – the top of the line racer – and the voice interactive Spider-Man – enter the Marvel Universe like never before. (Session from 1 – 1.30pm only.)

BLKTATU makes fully autonomous precision drone deliveries possible. With a high degree of safety, BLKTATU are able to deliver to apartment blocks and high rise buildings, something that much larger drone delivery companies are struggling with. Meet CEO, Clinton Burchat, and discover how BLKTATU is changing how we receive deliveries. (Session from 2 – 2.30pm only.)

QUT's Dr Matthew Dunbabin will explore existing and emerging robot technologies including how to blow up a robot, and other ways to monitor the environment. Robots are great at doing the three D's – the Dirty, the Dull and the Dangerous. But how far can we push them today, particularly for collecting data in very specific and challenging environments? The discussion will look at emerging robot technologies and the potential application to environmental monitoring. He will also provide examples of his own research into "environmental robotics" including the development of robots for Crown-of-Thorns Starfish management, water quality monitoring, and subsea volcanoes. (Session from 3 – 3.30pm only.)

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## WHEN

Sunday 20 August 2017

## WHERE

Room 512, level 5, Science and Engineering Centre (

# CENTRAL ANALYTICAL RESEARCH FACILITY (CARF) TOURS

*Join us for a guided tour of the Institute for Future Environments' Central Analytical Research Facility.*



View our purpose-built laboratories with state-of-the-art equipment for electron and light microscopy, analytical and environmental chemistry, molecular genetics, proteomics, mass spectrometry and X-ray and neutron diffraction.

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## WHEN

Sunday 20 August 2017

## WHERE

Level 6, Science and Engineering Centre (P block)

## TIME

11am – 2pm

## DURATION

15 minutes

## PRESENTED BY



# DROID RACING SHOWCASE

*A showcase of the droids raced at the 2017 Droid Racing Challenge.*



Visitors will have the chance to see autonomous droids and learn about the processes and technology used in designing these machines.

The Droid Racing Challenge attracts universities from around Australia and New Zealand, to design a vehicle that is capable of completing a race around an obstacle filled track autonomously, using a range of sensors and methods of actuation. Computer vision is a key component of this competition with some of the droids using advanced machine learning techniques to detect their surroundings.

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## WHEN

Sunday 20 August 2017

## WHERE

D Block Courtyard

## TIME

11am – 2pm

## TICKETS

Drop-in, no booking required

## PRESENTED BY



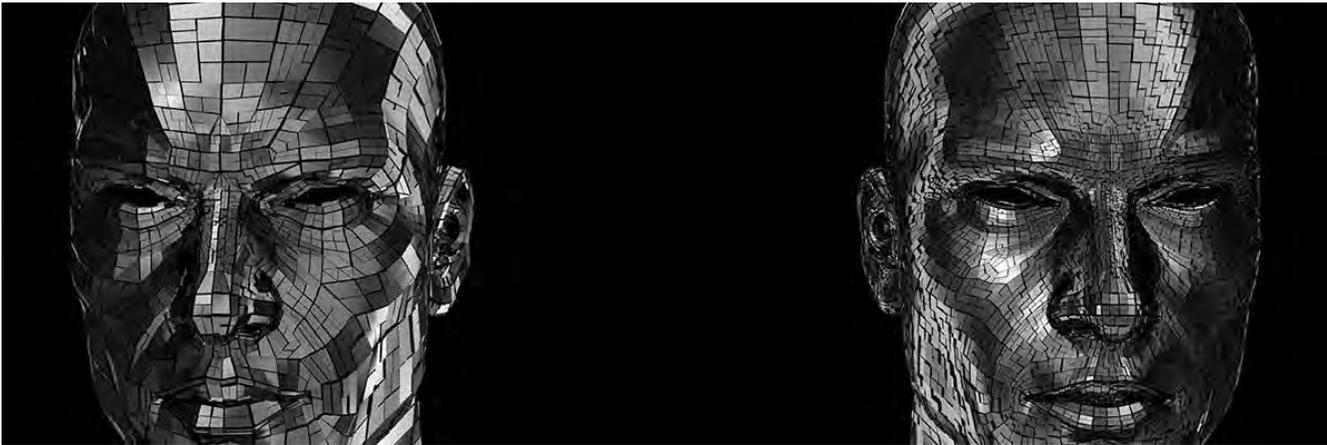
**QUTRC**

## ACKNOWLEDGEMENTS

QUT DRC Teams

# ROBOTS THAT NEED TO MISLEAD: BIOLOGICALLY-INSPIRED MACHINE DECEPTION

*What can animal behaviour teach us about the need for deceptive robots?*



In this keynote, Georgia Tech's Professor Ron Arkin discusses research for the US Office of Naval Research on deception and its application within robotic systems. Squirrels will hoard to mislead a predator and birds will mob for protection by feigning strength when none exists. How might this apply to the use of robotic systems in the military and what are the ethical implications of this research?

**Professor Ronald C. Arkin** received the B.S. Degree from the University of Michigan, the M.S. Degree from Stevens Institute of Technology, and a Ph.D. in Computer Science from the University of Massachusetts, Amherst in 1987. He then assumed the position of Assistant Professor in the College of Computing at the Georgia Institute of Technology where he now holds the rank of Regents' Professor and is the Director of the Mobile Robot Laboratory. He also serves as the Associate Dean for Research and Space Planning in the College of Computing at Georgia Tech since October 2008. During 1997-98, Professor Arkin served as STINT visiting Professor at the Centre for Autonomous Systems at the Royal Institute of Technology (KTH) in Stockholm, Sweden. From June-September 2005, Prof. Arkin held a Sabbatical Chair at the Sony Intelligence Dynamics Laboratory in Tokyo, Japan and then served as a member of the Robotics and Artificial Intelligence Group at LAAS/CNRS in Toulouse, France from October 2005-August 2006.

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## WHEN

Sunday 20 August 2017

## WHERE

Room 421, level 4, Science and Engineering Centre (P block)

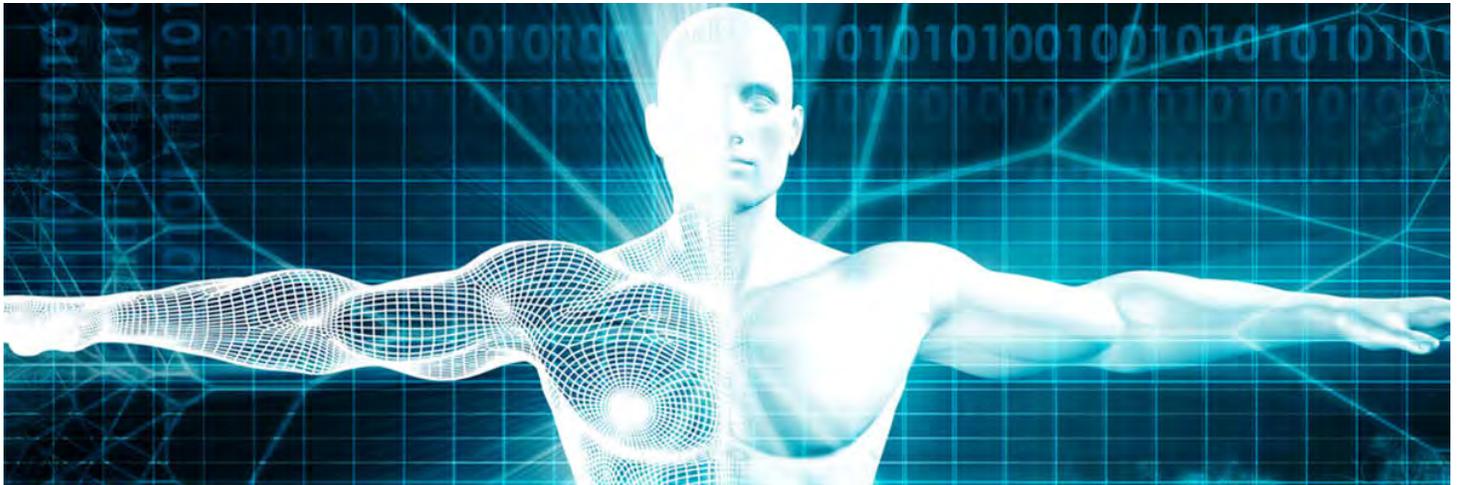
## TIME

11.30am – 12.40pm

## DURATION

1 hour + 10 minute Q & A

# BIOTECH: TECHNOLOGY, THE BODY, AND HEALTH FUTURES



Advancements at the intersection of biology, engineering, medicine, and robotics are changing the landscape of health futures. These advances have the potential to lower health costs, improve access to treatments and health outcomes, and ultimately better the quality of life for individuals and society.

Driven by a curiosity to experience these developments firsthand, a DIY citizen-scientist approach called bio-hacking is also gaining momentum and attracting people from disciplines beyond the lab. Join Mathilde Desselle (QUT), and panellists Jaden Hastings, Professor Justin Cooper-White (University of Queensland), and Dr. Nicholas Opie (University of Melbourne), as they discuss the trajectory of these developments, the ethical and societal impacts, and some of the challenges to interfacing the body with technology.

## BIOS

**Mathilde Desselle** is a project manager at QUT, working towards the establishment of the Herston Biofabrication Institute that will apply 3D imaging, modelling and printing to medicine. She is also an ABC Radio Brisbane Community Correspondent for science. An award-winning biomedical research manager, she has 10 years' experience driving strategic life sciences research initiatives in Europe and Australia, and is passionate with finding technology-based approaches to advance human health. She is a Board Director for the Tech Girls Movement foundation, promoting positive role models to encourage and raise awareness of STEM careers for girls. Previously, she served on the board of directors of Women in Technology for three years. A passionate science communicator, she is a coordinator for the National Science Week Catch a Rising Star: Women in Science in Regional QLD program.

**Jaden J. A. Hastings'** work focuses upon the intersection and interplay of art and science – from philosophy to praxis – melding together the fields of biology (tissue engineering, genomics), informatics (machine learning), and art/design. An alumna of New York University, Harvard University, and the University of Oxford with advanced degrees in both Biology and Bioinformatics, Jaden's career in scientific research spans over a decade. In 2012, she was awarded the singular UAL Chancellor's Scholarship to attend the studio based MA in Art & Science at Central Saint Martins. Graduating with Distinction, she was also one of three students shortlisted for the Daniel Ford Prize for Innovation. Since graduating in 2014, Jaden has been an invited to be artist-in-residence for the Story of Light Festival in Goa, the Khoj Workshops in Delhi, SymbioticA in Perth, the Lumen Residency in Atina, Italy, and Ausstellingsraum Klingental in Basel. Presently,

Jaden is a PhD candidate at the University of Melbourne in Interdisciplinary Arts Practice on an Endeavour IPRS/APA scholarship.

**Dr Nicholas Opie** is a biomedical engineer with experience in neural prostheses. Dr Opie completed his BE (Hons) and BSc undergraduate degrees at Monash University in 2007 and was awarded his PhD in 2012 for research developing a bionic eye. He was employed as the Surgical Program Coordinator on Bionic Vision Australia's retinal prosthesis project, and was integral in development and preclinical validation of the technology designed to restore rudimentary vision to the profoundly blind. This device was implanted in three patients in 2014 with great success. In 2012, Dr Opie was awarded a \$1.33M grant from US defense organization DARPA to develop a minimally invasive brain machine interface. This funding, and subsequent funding totaling more than \$8.5M has enabled Dr Opie to establish and co-lead the Vascular Bionics Laboratory within the Department of Medicine at The University of Melbourne; a laboratory which has grown to support more than 20 graduate and undergraduate researchers. Dr Opie is leading the research team conducting preclinical safety and efficacy trials on a device capable of recording neural information from within a blood vessel, which may enable direct brain control of wheelchairs, exoskeletons and computers to people with paralysis as early as 2018. Dr Opie is the founding CTO of SmartStent, a company incorporated to translate endovascular bionic technology into clinical application.

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## **WHEN**

Sunday 20 August 2017

## **WHERE**

Room 514, level 5, Science and Engineering Centre (P block)

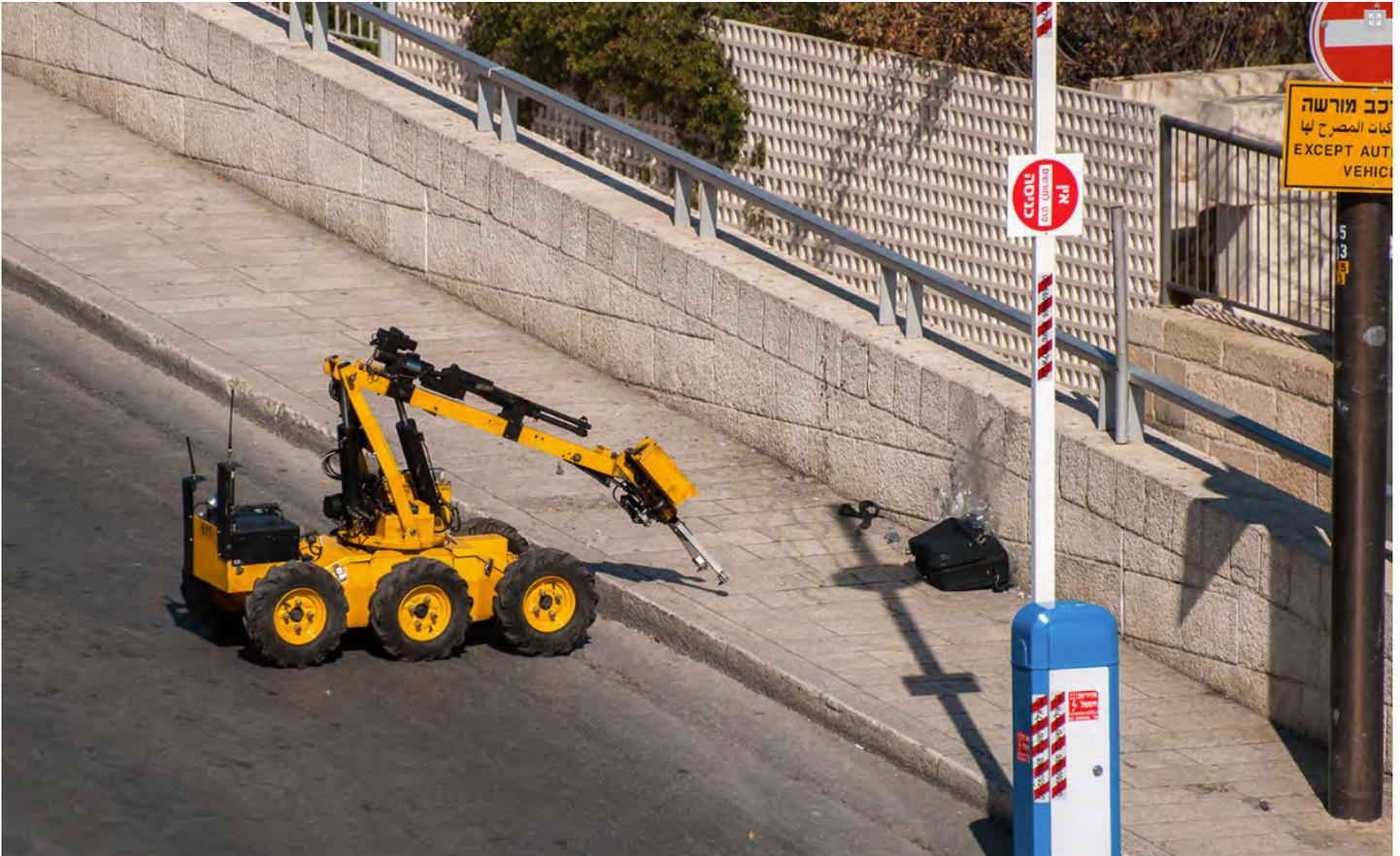
## **TIME**

11.45am – 12.45pm

## **DURATION**

60 minutes

# ROBOCOP: ROBOTS, ETHICS, AND LAW ENFORCEMENT



Robotic technologies are being used globally to do what humans find too difficult, tedious, dangerous, or beyond our capacity. But the use of robots to deliver law enforcement raises new concerns, and has given rise to intense ethical debates about when and how robots are deployed by police for this purpose.

Professor Matthew Rimmer (QUT) leads this discussion, in conversation with Dr Monique Mann (QUT), Associate Professor James Mullins (Deakin University) and Acting Superintendent Brad Wright (Queensland Police Services), to consider the implications of remote-controlled, fully autonomous and semi-autonomous robots as law enforcers, the types of considerations needed to ensure safe practices, and whether anxieties surrounding robotics in policing are grounded in truth or fiction.

## BIOS

**Dr Monique Mann** is a lecturer at the School of Justice, and a member of the Crime and Justice Research Centre (CJRC) and the Intellectual Property and Innovation Law (IPIL) Research Group, in the Faculty of Law at the Queensland University of Technology (QUT). Monique is advancing a program of socio-legal research on the intersecting topics of police technology, transnational policing and surveillance.

She holds a PhD from the Australian Research Council (ARC) Centre of Excellence in Policing and Security (CEPS), Griffith University node. Monique has interned with the United Nations Office on Drugs and Crime (UNODC) in Vienna,

was a visiting scholar at the Regulatory Institutions Network (RegNet) at the Australian National University (ANU) and worked as a Research Analyst at the Australian Institute of Criminology (AIC).

**Professor Matthew Rimmer** is a Professor in Intellectual Property and Innovation Law at the Faculty of Law, at the Queensland University of Technology (QUT). He is a leader of the QUT Intellectual Property and Innovation Law research program, and a member of the QUT Digital Media Research Centre (QUT DMRC) the QUT Australian Centre for Health Law Research (QUT ACHLR), and the QUT International Law and Global Governance Research Program. Rimmer has published widely on copyright law and information technology, patent law and biotechnology, access to medicines, plain packaging of tobacco products, intellectual property and climate change, and Indigenous Intellectual Property. He is currently working on research on intellectual property, the creative industries, and 3D printing; intellectual property and public health; and intellectual property and trade, looking at the Trans-Pacific Partnership, the Trans-Atlantic Trade and Investment Partnership, and the Trade in Services Agreement.

**Associate Professor James Mullins** is an applied robotics engineer with a background in medical, industrial and first responder robots. Working for Deakin University's Institute for Intelligent Systems Research and Innovation, James has been designing, building and supporting robots for Australia's law enforcement community for over 15 years. With a strong interest in using next generation technologies to solve real world problems, James works with a team of 75 engineers, scientists, mathematicians, programmers and machinists within IISRI, a team with the potential to rapidly bring technology to the end user. A strong believer of human-in-the-loop and human-on-the-loop, James is passionate about both providing technology solutions but also the ethical, social and personal implications of the introduction of new capabilities. Currently using virtual reality and augmented reality for fire fighter training, delivering robots and negotiator technologies to Queensland police and building advanced motion simulators for Australian Defence, James lives in Geelong Victoria and enjoys travelling and showcasing technology to the world.

**Acting Superintendent Brad Wright** has been a police officer for over 31 years with a broad range of experience across general duties, tactical crime, significant projects including whole of service and across agencies, policy officer including representing the Queensland Police Service (QPS) on national fora in particular the Australia and New Zealand Counter Terrorism Committee and specialist policing and the management of high-risk policing at its most critical levels.

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## **WHEN**

Sunday 20 August 2017

## **WHERE**

Room 514, level 5, Science and Engineering Centre (P block)

## **TIME**

1.15 – 2.15pm

# THE AGENCY OF HUMAN-ROBOTIC LUNATICS

*Imagination is our window into the future. Led by each generation of artists and scientists, it is through their explorations and inventions that we push towards the edges of possibility.*



Video: <https://vimeo.com/169659579>

Aeronautical and space developments are no exception and like other areas of human endeavour we are witnessing the increased use of robots as the technological tools for humans to make our visions of the future a reality. Remembering that you can architect the future, what lunatic ideas can we conceive, believe and achieve?

The Agency of Human-Robotic Lunatics is a live event featuring Artist-Astronaut, Dr. Sarah Jane Pell. Through the use of a recently developed autonomous subject tracking robotic camera system, the Cinema Swarm, we see Pell's live performance blend with VR mapping of historical lunar imaging data, and augmented reality artefacts from a real spacewalk simulation on earth called Project Moonwalk. Project Moonwalk develops and tests technologies and training procedures for future missions to the Moon and Mars\*.

This performance builds a future survival tool kit by creating experimental scenarios where the art of the future can be enacted. It demonstrates how creativity may be leveraged in the extreme natural and technologically mediated environments of space and space simulations on earth and examines the exchange between human and autonomous systems.

\*Project MOONWALK consortium comprises seven partners from six EU member states and one associated country: DFKI Robotics Innovation Center in Germany (Project Coordination), COMEX in France (Technical Coordination), EADS in Great Britain, LIQUIFER Systems Group (LSG) in Austria, Space Application Services (SAS) in Belgium, NTNU Centre for Interdisciplinary Research in Space in Norway, and Instituto Nacional de Técnica Aeroespacial (INTA) in Spain.

This project collaboration is between artists Dr. Sarah Jane Pell and Jaymis commissioned by Robotronica, QUT. Support received from: the Australian Government through the Australia Council, its arts funding and advisory body. Special thanks to: Project Moonwalk EU.

## BIOS

**Dr. Sarah Jane Pell** (AU) is an extreme performance artist combining astronautics, occupational diving, HCI media design, biotechnology, body performance and exploration. Best known for pioneering "aquabatics", she has exhibited and performed international since 1997 – usually underwater, in laboratories or museums. Her work promotes physical conditioning, creative visualisation and communication to embody, and critique the aesthetics of care and operation in sea-space exploration and discovery. Pell is an experienced Simulation Astronaut and the first artist-astronaut candidate assigned to a Suborbital Spaceflight Mission. She is a TED Fellow, Gifted Citizen Prize (Hon Mention) and Australia Council Fellow in Experimental and Emerging Arts.

**James Loveday** (AU) or the artist known as Jaymis is a video director and creative technologist. His label pushes the dimensions of VFX in video and live performances by mixing virtual reality, robots, cameras, 3D printers, music, electronics, computer gaming, programming, lighting, animation, and explosions for clients including Ars Electronica FutureLab, Brisbane Powerhouse and Airbus. He is a live VJ artist for bands 7bit Hero and Nonsemble and the developer of Cinema Swarm: the Autonomous Subject Tracking Robotic Camera System.

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## WHEN

Sunday 20 August 2017

## WHERE

Room Three Sixty, level 10, Y Block

## TIME

1pm and 3pm

## DURATION

30 minutes + Q & A

## PRESENTED BY

Dr. Sarah Jane Pell and Jaymis Loveday

## ACKNOWLEDGEMENTS

Support received from the Australian Government through the Australia Council, its arts funding and advisory body



## CINEMA SWARM CREDITS

- VR Development – Visitor.vision
- Lead Developer – Charles Henden
- 3D Artist – Craig Bowle



# AI VS HUMAN INGENUITY

*Artificial intelligence is rapidly developing, expanding the possibilities of technological innovation – but will algorithms ever eclipse human ingenuity, and how far can or should AI be used in the creative process?*



Join Professor Margaret Maile Petty (QUT), and panellists Soh Yeong Roh, Director of Art Center Nabi, Seoul, South Korea (Art Centre Nabi), Jack Nolan (PopGun), and Professor Michael Milford (QUT), as they survey some of the current applications of AI in creative sectors, where it might be heading, and what insights AI can reveal to us about the nature of creativity itself.

## BIOS

**Margaret Maile Petty** is Professor and Head of the School of Design in the Creative Industries Faculty at Queensland University of Technology (AU). Her research broadly investigates the discourse, production, and consumption practices of the modern built environment, with a particular focus on artificial lighting and interiors. She has published broadly in academic journals such as the JSAH, Journal of Design History, Home Cultures, Interiors, and PLAT and is co-editor of *Cities of Light: Two Hundred Years of Urban Illumination* (Routledge, 2015) with Sandy Isenstadt and Dietrich Neumann, as well as *Architectures of Display: Department Stores and Modern Retail* (Ashgate, 2017) with Anca Lasc and Patricia Lara-Betancourt.

**Soh Yeong Roh** (director | art center nabi) is said to have pioneered the new media art scene in Korea by founding Art Center Nabi in 2000. Her experience in the field goes back to 1991 when she served as head of Art and Technology Exhibition at Daejeon Expo. Seeing the possibility of digital technology transforming much of our lives, Ms. Roh began to explore how we could use the technology to serve humanity, which has become her lifelong mission. Besides running Art Center Nabi, a powerhouse of media art with its lab and education programs, she serves as a board member at Advanced Institutes of Convergence Technology, Creative Commons Korea, and P.A.T.I., an alternative design school. She is also an adjunct professor at the Graduate School of Convergence Science and Technology, Seoul National University, and a visiting professor at the Department of Art and Technology, Sogang University.

**Jack Nolan** is a co-founder and the CEO of Popgun. Popgun is a Brisbane based company creating artificial intelligence software for the music industry. Popgun completed the Techstars Music accelerator program at the beginning of 2017 where they showed their piano-playing AI to the leaders of the music industry. Jack is a final year Law and Business student at QUT, and prior to Popgun, he worked in Venture Capital at BlueSky and in Investment Banking at JPMorgan.

**Professor Michael Milford** is a leading robotics researcher conducting interdisciplinary research at the boundary between robotics, neuroscience and computer vision, and a multi-award winning educational entrepreneur. His research models the neural mechanisms in the brain underlying tasks like navigation and perception in order to develop new technologies, with a particular emphasis on challenging application domains where current techniques fail such as all-weather, anytime positioning for autonomous vehicles. He currently holds the position of Professor at QUT, as well as Australian Research Council Future Fellow, Microsoft Research Faculty Fellow and Chief Investigator on the Australian Centre for Robotic Vision.

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## **WHEN**

Sunday 20 August 2017

## **WHERE**

Room 514, level 5, Science and Engineering Centre (P block)

## **TIME**

2.45 – 3.45pm

## **DURATION**

60 minutes

## **PRESENTED BY**

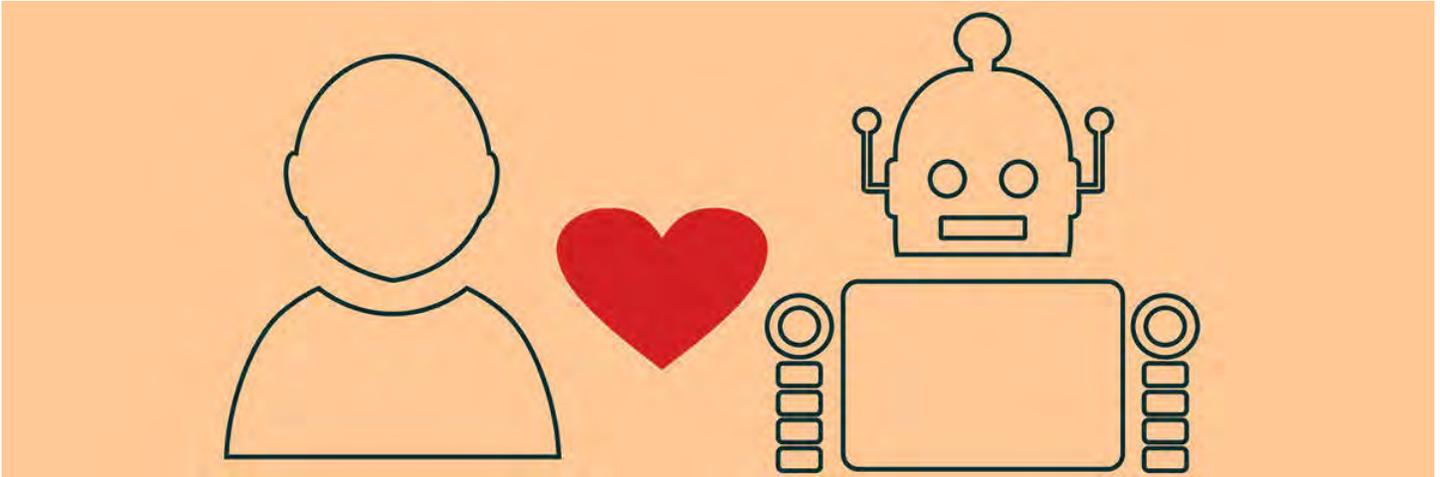
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## **ACKNOWLEDGEMENTS**

Soh Yeong Roh's visit is supported by the Australian Government through the Australia-Korea Foundation of the Department of Foreign Affairs and Trade.

# ROBOTS, ETHICS, AND INTIMACY: THE NEED FOR SCIENTIFIC RESEARCH

*What are the legal, ethical and societal issues if humans form intimate relationships with robots as the recent films such as Ex Machina and TV shows such as Westworld have represented?*



Market forces and customer demand are driving the creation of robots where humans are forming strong emotional attachments. In this keynote, Georgia Tech's Professor Ron Arkin will discuss the emerging field of intimate robotics and argues that prior to the technology becoming fully actualised we need research and debate on what effects the technology may have on users and society. Dr Kate Devitt (QUT Faculty of Law) responds to these developments with consideration of the ethical concerns at play in this new technological frontier.

WARNING: This keynote is for mature audiences 18+ only. Strictly no minors allowed.

## BIOS

**Professor Ronald C. Arkin** received the B.S. Degree from the University of Michigan, the M.S. Degree from Stevens Institute of Technology, and a Ph.D. in Computer Science from the University of Massachusetts, Amherst in 1987. He then assumed the position of Assistant Professor in the College of Computing at the Georgia Institute of Technology where he now holds the rank of Regents' Professor and is the Director of the Mobile Robot Laboratory. He also serves as the Associate Dean for Research and Space Planning in the College of Computing at Georgia Tech since October 2008. During 1997-98, Professor Arkin served as STINT visiting Professor at the Centre for Autonomous Systems at the Royal Institute of Technology (KTH) in Stockholm, Sweden. From June-September 2005, Prof. Arkin held a Sabbatical Chair at the Sony Intelligence Dynamics Laboratory in Tokyo, Japan and then served as a member of the Robotics and Artificial Intelligence Group at LAAS/CNRS in Toulouse, France from October 2005-August 2006.

**Dr Kate Devitt** has a PhD in philosophy and graduate certificate in cognitive science from Rutgers, The State University of New Jersey. She is a Research Fellow in Robotics and Autonomous Systems in the School of Electrical Engineering and Computer Science in the Faculty of Science and Engineering and Research Associate for the Faculty of Law, Queensland University of Technology (QUT). She is Chief Investigator building and evaluating a strategic decision support system for evidence-based innovation for a global online travel agency. Kate is a member of the Leadership team of the IntelliSensing Enabling Platform and a postdoctoral fellow in cognitive decision science for the Institute for Future Environments, QUT. She researches the ethics and rationality of autonomous and decision support systems.

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## **WHEN**

Sunday 20 August 2017

## **WHERE**

Room 421, level 4, Science and Engineering Centre (P block)

## **TIME**

2.45 – 3.45pm

## **DURATION**

60 minutes

## **SUITABLE FOR**

18+ only. Strictly no minors allowed.