

The following research activity has been reviewed via QUT arrangements for the conduct of research involving human participation. If you choose to participate, you will be provided with more detailed participant information, including who you can contact if you have any concerns.

Visual Analytics for Large-Scale Bioinformatic Data Sets

Research team contacts

Principal Researcher: Associate Professor James Hogan
Associate Researchers: Samuel Smith, PhD student
Michael Docherty, Associate Professor
Dr Daniel Johnson, Senior Lecturer
Prof Margot Brereton
**Electrical Engineering, Computer Science, Science and Engineering Faculty
Queensland University of Technology (QUT)**

What is the purpose of the research?

Our team is conducting a number of studies to determine the most effective approaches to visualising bioinformatics data sets. This study is part of the doctoral work of Samuel Smith. Its purpose is to determine the usefulness of certain visual features, and their ability to support insight and the discovery of new relationships among the data.

Are you looking for people like me?

The research team is looking for academic or research staff and students (advanced UG or PG) with some background in molecular biology and/or bioinformatics. We are particularly interested in participants with expertise in areas related to transcriptional regulation.

What will you ask me to do?

Your participation will involve examining datasets using a visualisation system designed to show a range of species and their genes, and whether they are affected by a specific regulatory gene. It will consist of an approximately 30 minute session of think-aloud evaluation of the system (you will be asked to use the system and describe what you are doing and thinking while you use it), followed by a 15 minute follow-up interview. Some basic instruction in the use of the system will be provided as part of the session.

Are there any risks for me in taking part?

The research team does not believe there are any risks beyond normal day-to-day living associated with your participation in this research. However, it is intended to record the audio of the evaluation and interview for further analysis, so if you do not wish to be recorded, you should not volunteer. It should be noted that if you do agree to participate, you can withdraw from participation at any time during the project without comment or penalty.

Please note that any information collected during this project may be used for potential future projects that are closely related to this one.

Are there any benefits for me in taking part?

It is expected that this project will not benefit you directly, but it will help improve knowledge and understanding of which visual features are most useful in this specific domain, and your feedback will be used to create an efficient and useful tool that may be useful for your future research.

Will I be compensated for my time?

To recognise your contribution, should you choose to participate, the research team is offering participants the chance to win one of three \$50 vouchers at Coles-Myer (Coles-Myer have no involvement in the study and neither they nor anyone else outside the research team will be given access to your data). If you choose to enter the draw for the voucher you will need to provide some basic contact information. However, your identity will not in any way be connected to your feedback.

Should you find the tools valuable, we will happily assist you with installation and use.

Who is funding this research?

The project is unfunded doctoral research.

I am interested – what should I do next?

If you would like to participate in this study, please contact Samuel Smith for details of the next step:

Samuel Smith	James Hogan
0450 620 380	07 3138 9328
st2.smith@student.qut.edu.au	j.hogan@qut.edu.au

You will be provided with further information to ensure that your decision and consent to participate is fully informed.

Thank You!

QUT Ethics Approval Number: 140000149

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RESEARCH TEAM

Principal Researcher: Associate Professor James Hogan
Associate Researchers: Samuel Smith, PhD Student
Michael Docherty, Associate Professor
Dr Daniel Johnson, Senior Lecturer
Professor Margot Brereton
Electrical Engineering, Computer Science (EECS)
Science and Engineering Faculty, Queensland University of Technology (QUT)

DESCRIPTION

Our team is conducting a number of studies to determine the most effective approaches to visualising bioinformatics data sets. This study is part of the doctoral work of Samuel Smith. Its purpose is to evaluate the usefulness of visualisation systems intended to allow new discoveries into bioinformatics.

The work is to be based on two existing visualisation tools, both developed at QUT.

- TRNDiff is intended to display a set of genomic networks that show transcription factors and the target genes they regulate, and how the regulatory relationships compare across different genomes.
- BLAST Explorer is intended to show graphically the similarity of a set of genes with respect to a selected query gene.

PARTICIPATION

The research team is looking for people from universities and medical research institutes in South East Queensland (both researchers and students at undergraduate or postgraduate level) with a background in molecular biology and/or bioinformatics. People with this background are likely to be users or future users of bioinformatics software, and thus of visualisation tools such as those under study. Specifically, we would like participants to provide feedback on whether the systems enable them to identify new relationships in bioinformatics datasets, and so become useful additions to the toolset for their own work.

Your participation will involve an audio recording interview at QUT's Gardens Point campus or your home institution that will take approximately 45 minutes of your time. The bulk of the interview will consist of a think-aloud session of using the program to examine genomic datasets, accompanied by a follow-up question session. Most of the evaluations require only a standard desktop computer in a quiet, and may be performed at QUT or at your home institution if this is convenient for a number of subjects. However, large scale evaluations will necessarily be undertaken using the Cube visualisation facility at QUT's Gardens Point Campus.

Questions will include:

- What was your initial impression of the visualisation system?
- What are your thoughts regarding the features of the interface that are used?
- What were your thoughts about the information that was present in the visualisation?

It is planned, however, to ask questions that are not in the script so that you will be able to go into more detail about answers we consider to be significant.

Your participation in this project is entirely voluntary. If you do agree to participate you can withdraw from the project without comment or penalty. If you withdraw, on request any identifiable information already obtained from you will be destroyed. Your decision to participate or not participate will in no way impact upon your current or future relationship with QUT.

You may be asked to participate in later evaluation sessions, or otherwise contacted by the researchers after the evaluation is complete. This is not required, and if you change your mind, you can opt out at any time.

EXPECTED BENEFITS

It is expected that this project will not benefit you directly, but it will help improve knowledge and understanding of which visual features are most useful in this specific domain, and your feedback will be used to create an efficient and useful tool that may be useful for your future research.

To recognise your contribution should you choose to participate, the research team is offering participants the chance to win one \$100 and one \$50 voucher for Coles-Myer stores.

RISKS

For most of these evaluations, there are no risks beyond normal day-to-day living associated with your participation. However, some participants may experience some disorientation or dizziness when working with very large scale displays. Those who experience discomfort of this nature at cinemas, or when using large workstation screens, may not wish to participate in this study. If you participate and show some of these symptoms at any time, you will be allowed to withdraw from participation without penalty.

PRIVACY AND CONFIDENTIALITY

All comments and responses will be treated confidentially unless required by law. The names of individual persons are not required in any of the responses.

The original audio recordings themselves will not be shared with anyone outside of the research team, and will not be used for any purpose outside of this research. However, if required, parts of the transcribed audio may be made available as a resource for those working on related projects, or for comparative purposes, or stored on an open access database for secondary analysis – No information that personally identifies you will be included if these situations arise. Any audio recordings that are made will be kept in the archives for seven years, in accordance with official Data Management guidelines.

Please note that any other non-identifiable data collected in this project may be used as comparative data in future projects.

CONSENT TO PARTICIPATE

We would like to ask you to sign a written consent form (enclosed) to confirm your agreement to participate.

If you do agree to participate, you can withdraw from the project without further comment or penalty. Your decision to participate, or not participate, will in no way impact upon your current or future relationship with QUT (for example: your grades) or your relationship with the researchers.

QUESTIONS / FURTHER INFORMATION ABOUT THE PROJECT

If have any questions or require further information please contact one of the research team members below.

Samuel Smith
0450 620 380
st2.smith@student.qut.edu.au

James Hogan
07 3138 9328
j.hogan@qut.edu.au

Michael Docherty
07 3138 2515
m.docherty@qut.edu.au

Daniel Johnson
07 3138 9263
dm.johnson@qut.edu.au

CONCERNS / COMPLAINTS REGARDING THE CONDUCT OF THE PROJECT

QUT is committed to research integrity and the ethical conduct of research projects. However, if you do have any concerns or complaints about the ethical conduct of the project you may contact the QUT Research Ethics Unit on 07 3138 5123 or email ethicscontact@qut.edu.au. The QUT Research Ethics Unit is not connected with the research project and can facilitate a resolution to your concern in an impartial manner.

Thank you for helping with this research project. Please keep this sheet for your information.



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RESEARCH TEAM CONTACTS

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0450 620 380

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James Hogan

07 3138 9328

j.hogan@qut.edu.au

Michael Docherty

07 3138 2515

m.docherty@qut.edu.au

Daniel Johnson

07 3138 9263

dm.johnson@qut.edu.au

STATEMENT OF CONSENT

By signing below, you are indicating that you:

- Have read and understood the information document regarding this project.
- Have had any questions answered to your satisfaction.
- Understand that if you have any additional questions you can contact the research team.
- Understand that you are free to withdraw at any time, without comment or penalty.
- Understand that you can contact the Research Ethics Unit on 07 3138 5123 or email ethicscontact@qut.edu.au if you have concerns about the ethical conduct of the project.
- Understand that the project will include an audio recording.
- Understand that non-identifiable data collected in this project may be used as comparative data in future projects.
- Understand that you may receive further contact from the researchers after your initial participation - you may opt out at any time without any negative repercussions.
- Agree to participate in the project.

Name

Signature

Date

I would be willing to be contacted about the possibility of participating in future research.

Please return this sheet to the investigator.