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University

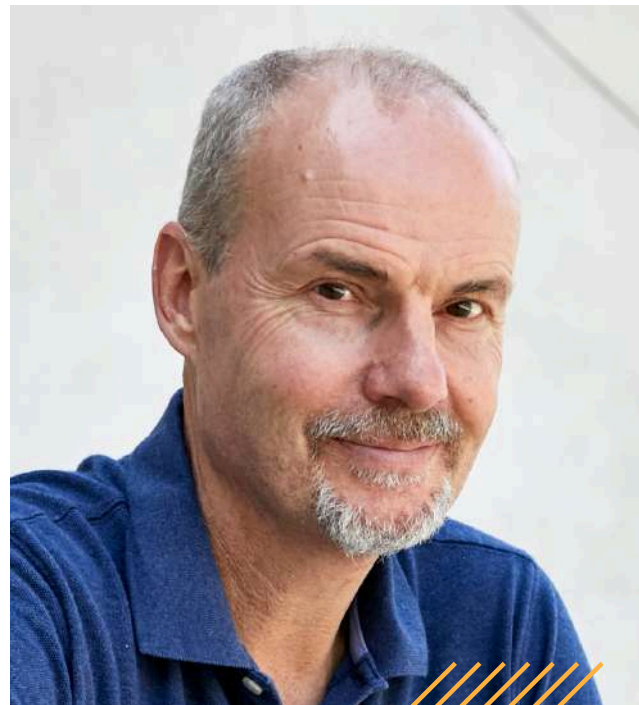
HUMAN-CENTRED SOFTWARE ENGINEERING (HUMANISE) LAB

MONASH
INFORMATION
TECHNOLOGY



ANNUAL ——— ○ >>>>
REPORT 2024

2024 was a *big* year



Professor John Grundy

Director, HumaniSE Lab

Welcome to our 2024 Annual Report. I'm thrilled to share what our Lab has been up to over the past 12 months, from impactful project outcomes to inspiring community engagements. Thank you for joining us in celebrating the year that was. We look forward to the exciting possibilities to come.

I would like to begin by congratulating our Deputy Director Professor Rashina Hoda on her promotion to Professor, a significant milestone in one's academic journey. It's a testament to both her extensive contributions to software engineering and unwavering dedication to fostering an inclusive and nurturing environment for all – which also won her the title of Australia's leading researcher in our discipline by [The Australian's 2025 Research Magazine](#).

From one celebration to the next, Professor Rashina also [launched her debut book](#) on qualitative research using socio-technical grounded theory that captures her years of learnings and insights to offer new, valuable and innovative perspectives for the research community.

More broadly in the Lab, we've had an outstanding quality and number of papers published in top-tier conferences and journals, including multiple papers across TOSEM, IST, JSS, ICSE, FSE, ASE and ISSTA. We have organised engaging workshops at high-profile avenues such as the 2024 IEEE Symposium on Visual Languages and Human-Centric Computing – of which I was also a proud Program Committee Co-Chair working with colleagues Dr Dulaji Hidellaarachchi, Dr Humphrey Obie and Dr Tanjila Kanij.

I would also like to take this opportunity to congratulate our PhD candidate Ruchi Sembey on winning the [Dean's Award for Equity, Diversity and Inclusion \(Community\)](#) which acknowledges her strong advocacy of women in STEM, inclusive teaching practices and educational support. And well done to Dr Omar Haggag for securing a National Intelligence Post-Doctoral Fellowship that will support groundbreaking work aligned to the organisation's research interests over the next two years.

This year we said farewell to Dr Anu Madugalla, Dr Tanjila Kanij and Dr Dulaji Hidellaarachchi who have been invaluable members of our Lab, moving to ongoing Lectureship roles at Deakin, Swinburne and RMIT respectively. Although they will be missed, we see their departures as new opportunities for collaboration when we welcome them back as partners one day. We wish them all the best in their future endeavours.

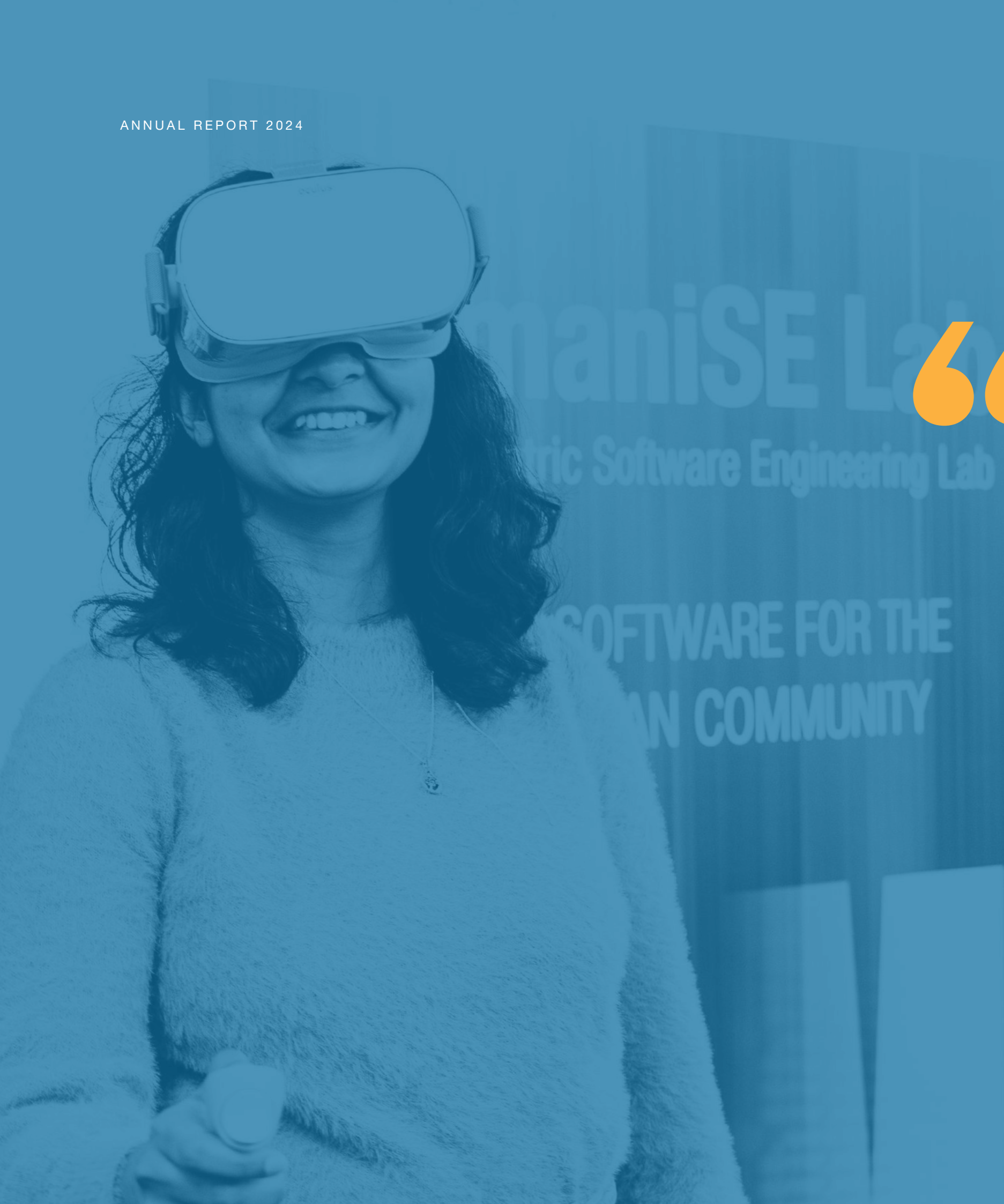
That's just a small glimpse into our activities over 2024. Please enjoy discovering more through this Annual Report – and thank you for your ongoing support of the HumaniSE Lab.



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We exist for you



The world is experiencing a widespread and rapid digital transformation. Everywhere you look, technology is at play – but where are people?



Led by Laureate Professor John Grundy, the HumaniSE Lab is a renowned research initiative focused on developing software that acknowledges, incorporates and meets the unique needs of real, everyday humans like you.

As technology becomes more and more inseparable from daily life, it's crucial to ensure that software serves society's best interests in all forms – accessibility, usability, emotions, personality, age, gender, values and culture.

By adopting a people-first approach to development, we can ensure that future tech is always geared towards the good of humanity. After all, true progress can only be achieved through solutions that are meaningful to those who use them.

Meet our team

Our vibrant community consists of people from all walks of life who enrich our mission with their unique perspectives, ideas and experiences. We're particularly proud to have a large proportion of women researchers – a norm we hope to see in software engineering more widely.

LAB LEADERSHIP



Director
Professor John Grundy,
ARC Laureate



Deputy Director
Professor Rashina Hoda



Research Fellow
Dr Omar Haggag



Research Fellow
Dr Kashumi Madampe



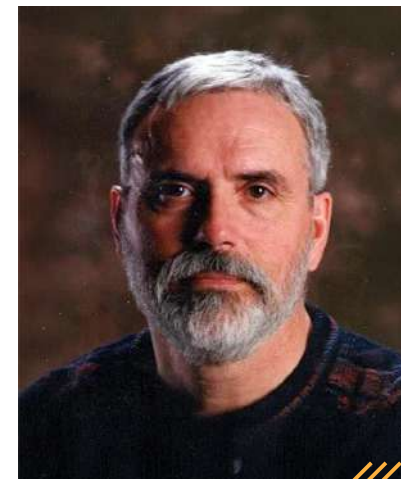
Project Officer
Susan Vukovic



Senior Lecturer
Dr Chetan Arora



Research Fellow
Dr Dulaji Hidellaarachchi



Adjunct Professor
Professor Bran Selic

RESEARCH ASSISTANTS

Aastha Pant
Jonny Low
Yutan Huang
Dr Vasudha Malhotra

EXTERNAL AFFILIATES AND ALUMNI

Dr Anu Madugalla
Lecturer, Deakin University

Dr Hourieh Khalajzadeh
Senior Lecturer, Deakin University

Dr Humphrey Obie
Iteration Manager, Telstra Health

Dr Ingo Mueller
IT Project Manager and User Experience
Analyst, Monash Health

Dr Jennifer McIntosh
Associate Professor, University of Melbourne

Dr Mojtaba Shahin
Lecturer, RMIT

Dr Tanjila Kanji
Lecturer, Swinburne University

Dr Waqar Hussain
Senior Research Scientist, CSIRO's Data61

Professor Jon Whittle
Director, CSIRO's Data61

Radhika Jain
PhD student, University of South Australia

Simone Spiegler
Release Train Engineer, Deutsche Bahn

PHD STUDENTS

Fanyu Wang	Requirements-driven Software Quality Assurance Using Large Language Models (LLMs)
Hashini Gunatilake	Investigating the Influence of Empathy on Developer-Stakeholder Interactions in Software Engineering
Hira Naveed	Runtime Monitoring for Responsible Machine Learning Using Model-driven Engineering
Jonny Low	Investigation of Mental Health Stakeholders Perception and Challenges on Artificial Intelligence (AI)
Maria Graetsch	Understanding and Supporting Multidisciplinary Data Intensive Software Teams
Mingyi Zhou	Improving the Reliability of Mobile AI Models
Negin Akbari	Human-in-The-Loop Scheduling and Resource Management Approaches for the Edge-to-Cloud Continuum
Ruchi Sembey	Emerging Technologies in Higher Education
Samuel Ferino	The Role of LLMs and Junior Software Developers - Perceptions, Opportunities, and Impact
Shavindra Wickramathilaka	Addressing Age-Related Accessibility Needs of Senior Users Through Model-Driven Engineering
Suyu Ma	Improving the Usability and Accessibility of Mobile UI Design with Generative Adversarial Network
Vedant Chauhan	Improving Human-Centric Software Defect Evaluation, Reporting and Fixing
Wei Wang	Designing Adaptive User Interfaces for mHealth Applications in Chronic Disease
Yonghui Liu	Improving the Static Analysis for Android Apps
Yuqing Xiao	Enhancing Digital Health Software for Aged Care: Requirements Understanding with Diverse Human Aspects and Personalised Care Development
Yutan Huang	Ethics Framework for Leveraging Generative AI in Digital Health Apps

2024 PHD GRADUATES

Aastha Pant	Enabling Ethical AI – A Socio-Technical Perspective
Devi Karolita	Persona Incorporation in Requirements Engineering
Ben Joseph Philip	A Unified Application Platform for mHealth Services, Deakin University



Augmenting knowledge. Amplifying impact.

We invite leading researchers and professionals to share their expertise with us, creating an opportunity for both knowledge sharing and professional development. What we learn is then embedded into our projects that collaborate with organisations across diverse sectors – like a dynamic partnership ecosystem.

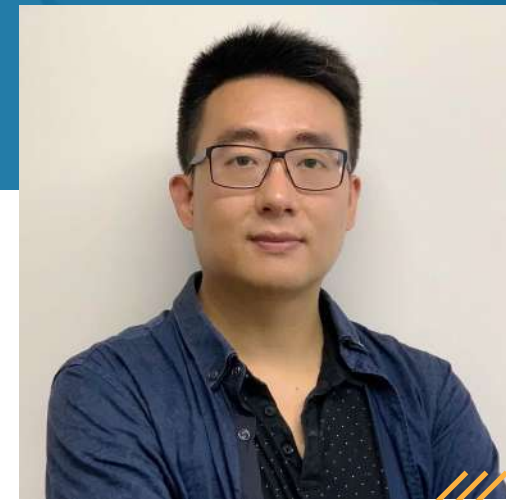
VISITORS



Arik Freidman
Senior Principal Data Scientist,
Atlassian



A/Prof Christoph Treude
Associate Professor, Computer
Science, Singapore Management
University



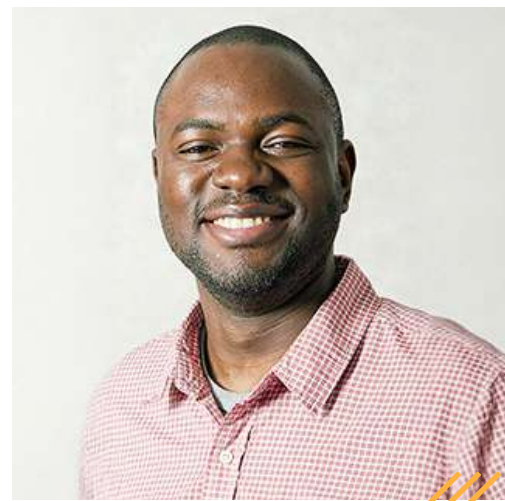
Dr James Zheng
ARC Research Fellow, Future
Communications Research Centre,
Macquarie University



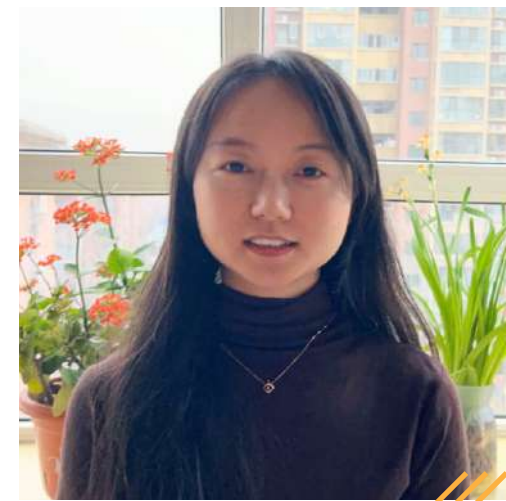
A/Prof Kellie Blincoe
Associate Professor, Department of
Electrical Computer and Software
Engineering, University of Auckland



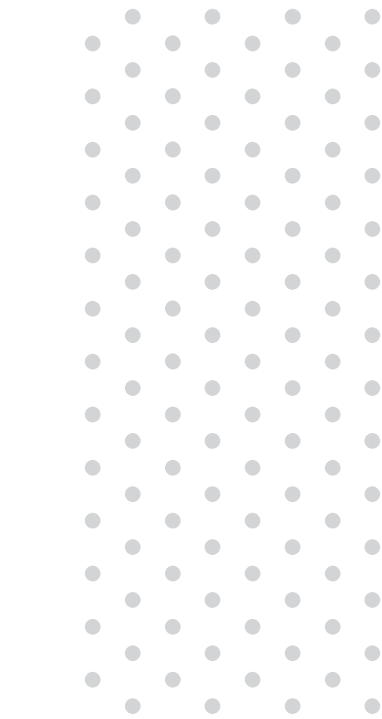
Larissa Salerno
PhD Candidate, The University of
Melbourne



A/Prof Sherlock Licorish
Associate Professor, Department of
Information Science, University of
Otago



Zejun Zhang
PhD Candidate,
Australian National University



For the generations ahead

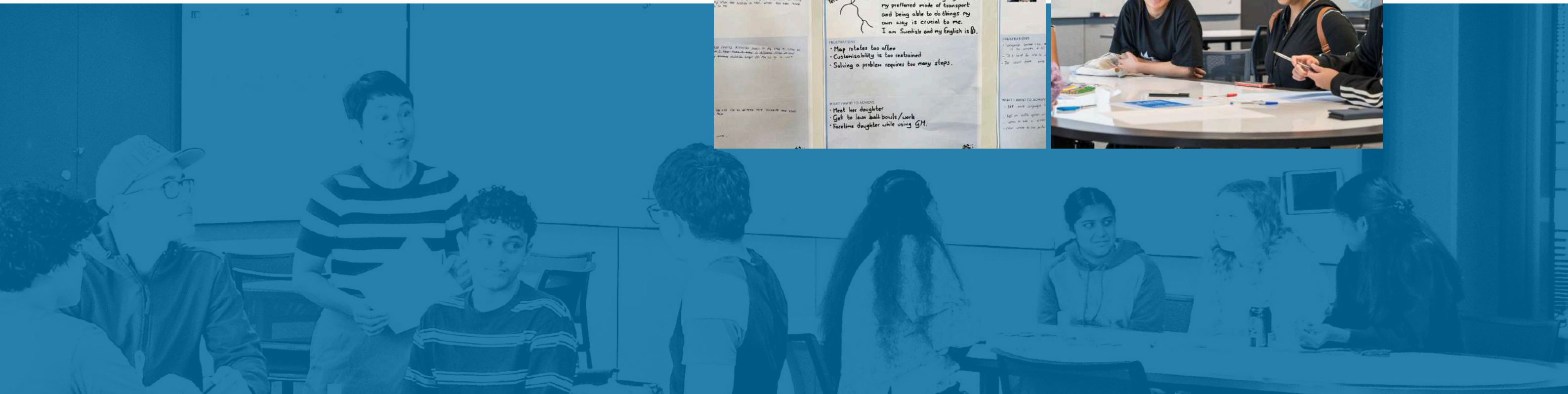
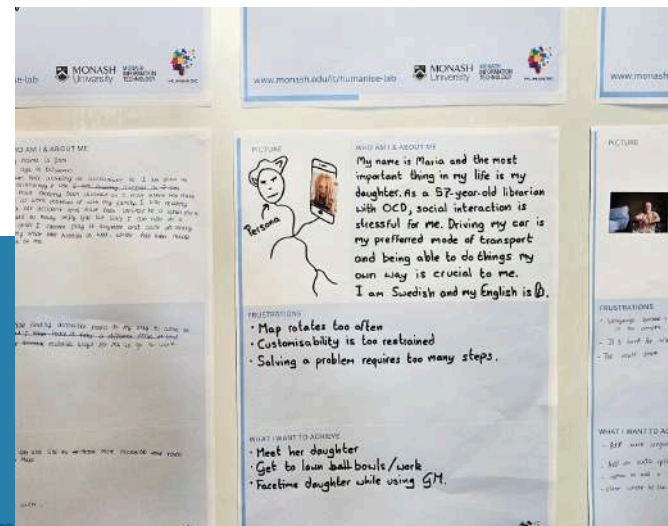
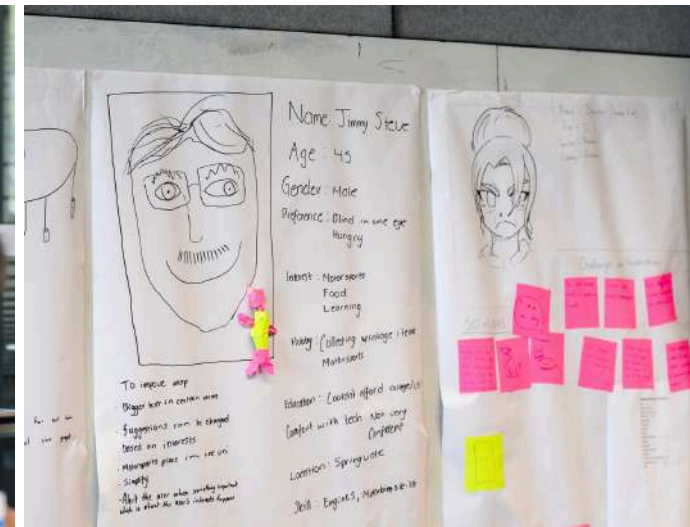
Although we focus on creating human-centric software solutions, we also aim to empower fellow developers and engineers while inspiring the next generation to pursue an exciting future in our field.

Robogals Engage Engineers

Held across Monday 15 and Tuesday 16 January, we were once again pleased to host ten Engage Engineers workshops for Year 9 and 10 students – with registrations reaching capacity!

Over two days, participants learned about personas and the integral role they play in human-centric software engineering. Then they were tasked with developing their own persona for Google Maps taking into account key factors such as age, language, culture, disabilities and access.

The activity encouraged students to delve into what works for unique individuals, helping them identify improvements for diversity such as adjustable maps for people with vision impairments or language options for those from non-English speaking backgrounds.





PhD symposiums

Your one-minute pitch

Held in April, this workshop focused on honing our PhD students' ability to pitch their projects swiftly and create a memorable professional profile. Participants developed a single slide to present their research, focusing on impact and translating their technical specifications into benefits for everyday people.

The slides were assessed by a panel of judges and prizes were awarded to the most compelling ones. This initiative was strong practice for competitions such as the renowned 3-minute thesis – held in more than 200 universities worldwide.



Visualising your project

Featuring guest presenters from the Faculty's Marketing and Communications Team, this hands-on session focused on enhancing the visual designs of research posters, covering elements such as design sensibility, layout, colour and Canva.

Participants created their own posters, which involved tasks such as designing professional graphs and figures, with the guidance of experienced researcher Professor Rashina Hoda. Attendees then refined their work over the subsequent weeks and presented them for grading on both visual design and content quality. Certificates were awarded to recognise their efforts and achievements.



ADD A HEADING

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Participants

Chat

React

2024 Monash Open Day

Showcasing Software Engineering

The university's flagship annual recruitment event, 2024 Monash Open Day saw more than 7,500 attendees tour the Faculty of IT's innovative precinct on Sunday 4 August. We seized this opportunity to engage future students and their loved ones about the importance of human-centred software and why software engineering is an ideal specialisation for those who want to make an impact.

We had three PhD projects on display to exemplify the possibilities:

- Empathy in Software Engineering: Guests took our empirically-driven test to assess their empathy – a crucial element of software engineering. (Hashini Gunatilake)
- Designing Adaptive User Interfaces (UI) for mHealth Applications Targeting Chronic Diseases: We discussed the importance of adaptive UI with attendees who had experience with chronic diseases and got their perspectives on what they would appreciate in an app. (Wei Wang)
- Adaptive User Interfaces for Seniors: We shared key considerations when designing software for seniors, prompting future students to think about what their older relatives might need in an app. (Shavindra Wickramathilaka)

In the Faculty's Course Information marquee, Professor John Grundy and Dr Chetan Arora also actively spoke about the diverse degree pathways and combinations students can undertake to create a future in software engineering – showcasing how complementary the specialisation is with other fields.

Equity, Diversity and Inclusion booth

In her capacity as the Faculty of IT's Associate Dean (Equity, Diversity and Inclusion), Professor Rashina Hoda hosted an equity, diversity and inclusion booth during Open Day with colleagues Cally Martin, Phil Abramson and Dr Roisin McNaney. It prompted passers-by, especially those from intersectional backgrounds, to contribute their thoughts on what would make an IT workplace feel welcoming for them.

Professor Hoda also engaged Henna and Arabic calligraphy artists as part of the Faculty's celebration of diversity.



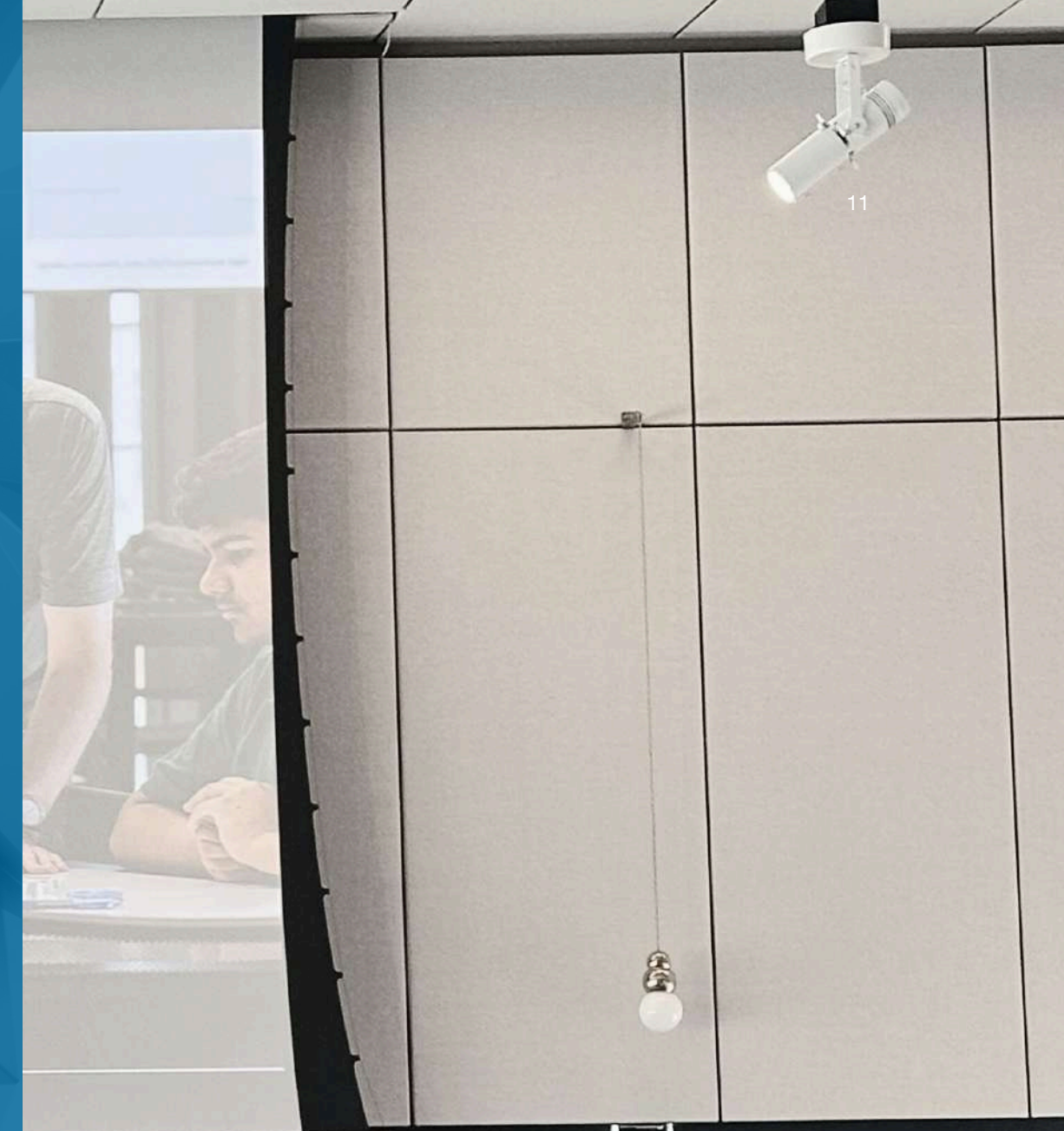
Industry showcase and thought leadership event

Showcasing Software Engineering

On Monday 27 May, we held a major showcase and thought leadership event on how organisations can partner with us to lead the era of human-centric software. We were pleased to have Arik Friedman from Atlassian, Steve Versteeg from Microsoft and Sabina Streatfeild from Commonwealth Bank of Australia, as well as our Lab's executives and former researchers, speak about:

- success stories of impactful industry collaborations with the Lab
- how human-centric software benefits organisations and broader society through better accessibility, user experiences, efficiency, reputation and more
- the state of Australia's software engineering industry and its most pressing needs
- the diverse collaboration opportunities open to organisations of all sizes and kinds

The successful event saw new connections made and lots of rare insights shared. This included several industry contacts discussing projects with the HumaniSE team, joining funding bids, expressing interest in industry-based learning placements and other work experience programs, or hosting HumaniSE PhD candidates for internships.



Champion for change: RUCHI SEMBEY

What can one do to make the world a better place? Lots of things – as our passionate PhD student Ruchi proves time and again. Known for her remarkable enthusiasm, dedication and contributions to academia, community and education, she's truly inspiring by example as an architect of a brighter tomorrow.

Showcasing Software Engineering

Ruchi is a co-facilitator in the [Superbots Industry Immersion program](#), a partnership between Monash Tech School, the Faculty of Information Technology and Versa Connects. It introduces girls in Years 7 to 9 to AI voicebot design, motivating the next generation of female technologists.

By getting the participants hands-on in developing meaningful solutions, and serving as an visible role model herself, Ruchi is helping to break down stereotypes that ward girls away from a future in STEM. She shows that innovation knows no gender – and IT is a field where all can succeed.

At a university level, Ruchi was part of the Monash flagship program [Global Immersion Guarantee](#) in 2024, leading 65 undergraduate students on a two-week sustainability-focused study trip to Italy. Travelling to places like Prato, Siena, Bologna and more, this eye-opening journey taught participants about mass tourism, fast fashion and the circular economy by engaging them in seminars and dialogues with local communities, businesses and experts.

Ruchi was also a panellist and judge for the [Change It Challenge](#) which saw her tour cities in India, watching top students present their solutions to major sustainability challenges – from air pollution and floods to deforestation and clean water access. It was a fantastic opportunity to engage young changemakers, tap into fresh ideas and support advocacy and innovation at a local level.

This year, Ruchi's teaching excellence in Australia and in international programs across Vietnam, Hong Kong and Italy was recognised by a prestigious Advance HE Fellowship that celebrates a commitment to exceptional teaching, professional development and leadership in the academic community. She was also the recipient of both the Faculty's Dean's Award for Equity, Diversity and Inclusion (Community) and the Monash Vice-Chancellor's Excellence Award for Equity, Diversity and Inclusion (Special Commendation).



By engaging in programs like Superbots and the #ChangeIt Challenge, I can connect with young changemakers, encourage fresh ideas and foster a more inclusive, dynamic future. Hands-on experiences and supportive mentorship can do a lot in dispelling stereotypes and demonstrating that innovation is for everyone.





The supportive and inclusive culture of the HumaniSE Lab has been instrumental to my growth as a researcher and advocate for social good. I am grateful for the opportunities to collaborate with brilliant minds and make a tangible impact on society.

A compassionate researcher for social good

[Publishing her first paper](#) in February 2024, Ruchi's PhD research investigates the potential applications and integration of emerging technologies in higher education. Her work paves the way towards richer and more immersive learning for students, leveraging innovations such as extended reality, for which she was featured in the [2025 Faculty's Postgraduate Course Guide](#).

In the same vein, Ruchi also organised and hosted an insightful tour of the Faculty's Mixed Reality Lab for VIPs such as Sara Goldsworthy, Head of National Security & Defence Public Policy at Amazon Web Services (Australia & New Zealand), the Faculty's Dean Professor Ann Nicholson and representatives from the Monash Advancement and VARS team. This event was a prime opportunity to speak about the innovative work in the HumaniSE Lab while honing Ruchi's leadership.

Beyond Australia, Ruchi participated in the inaugural [interdisciplinary research hackathon Monash PITCH](#) where she travelled to Italy to collaborate with other high-performing PhD candidates from Monash's global network. Tasked with [developing a solution for sustainable energy transitions](#) among the Prato community, her team developed a multi-faceted, persona-driven approach that involved engaging with target households to understand their practices and then translating how the net zero strategy can be integrated into their daily lives.

Adding to her exceptional PhD experiences, Ruchi was also selected as one of the first interns at the Department of Education, working on the implementation of the Australian government's \$1.6B Australia's Economic Accelerator program. This funds research translation and commercialisation projects to drive economic growth and innovation.

In this past year Ruchi was announced as The Kathleen Fitzpatrick Australian Research Council Laureate Fellowship PhD Thinker which propelled her to collaborate with women researchers across Australia, improving the real-world adoption of research while driving meaningful societal change.



How we're making an impact

This section highlights projects that have achieved exceptional success, made a significant impact or hold a special place for our lab members. It also summarises our broader scope of initiatives that are improving human-centric software *holistically*.



SPECIAL MENTIONS



THE EMOTIONAL ROLLER COASTER OF RESPONDING TO REQUIREMENTS CHANGES IN SOFTWARE ENGINEERING

Lead: Dr Kashumi Madampe

Collaborators: Prof Rashina Hoda, Prof John Grundy

Outcome: A guide on what triggers emotions in software professionals which influence decision-making and productivity.

This project attracted significant attention from the global software community, receiving positive feedback from industry leaders and coverage among high-profile publications. Many professionals, including top software engineering leads, use the guide and it has influenced research in diverse companies.

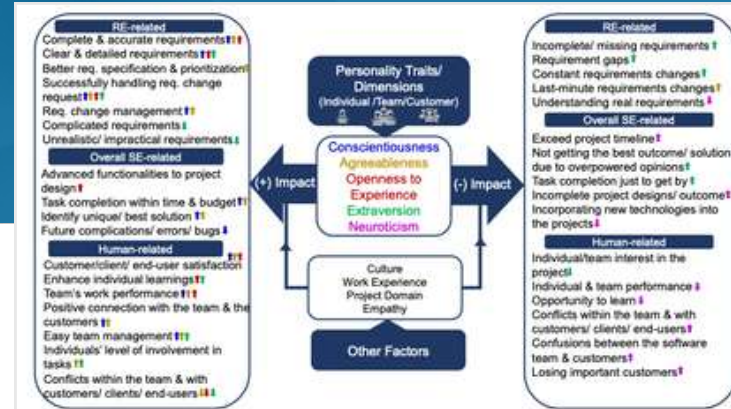


Fig.7 Overview of the impact of personality on RE/SE activities: The direction of the arrows indicates whether the impact is increasing (↑) or decreasing (↓) and the colour of each arrow indicates the respective personality trait that causes the impact

IMPACT OF PERSONALITY ON REQUIREMENTS ENGINEERING ACTIVITIES: A MIXED-METHOD STUDY

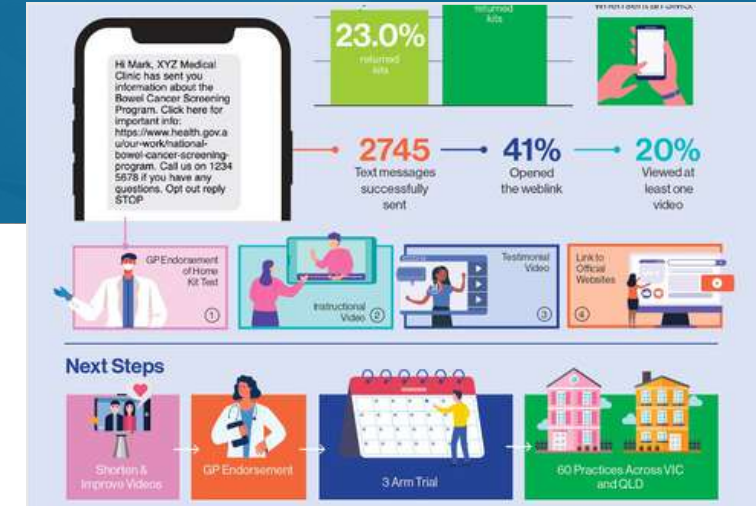
Lead: Dr Dulaji Hidellaarachchi

Collaborators: Prof John Grundy, Prof Rashina Hoda, Dr Ingo Mueller

Outcome: Guidance on how to handle the influence of software practitioners' personalities on requirements engineering (RE) and ultimately, a software's ability to meet user needs.

From previous work with industry, we identified personality as an important human aspect that needs to be further investigated in relation to RE – considered the most human-centric and socio-technically intensive activity in software development.

Through surveys with standard personality tests and interviews with software practitioners globally, we identified that most score high in agreeableness and conscientiousness, with average scores in extraversion and neuroticism.



SMARTSCREEN

Lead: A/Prof Jennifer McIntosh

Collaborators: The University of Melbourne, PenCS, Cancer Council Victoria, Western Victoria Primary Health Network, Consumers

Outcome: A successful SMS trial sent to 50 to 60-year-olds which boosted National Bowel Cancer Screening (NBCSP) kit returns.

Australia has one of the highest rates of colorectal cancer but uptake of the NBCSP which can reduce morbidity is low.

To address this, we trialed SMSs sent from general practices that included a personalised endorsement, a motivational video, instructions and further resources. Highly successful, the results will inform the testing of this intervention in a broader Australian population.

Funded by the Victorian Cancer Agency.



SPECIAL MENTIONS



GUSTOSENSE: TOWARDS UNDERSTANDING THE DESIGN OF PLAYFUL GUSTOSONIC EATING EXPERIENCES

Leads: Dr Humphrey Obie, Yan Wang (Exertion Games Lab)

Collaborators: Dr Zhuying Li, Prof Flora D. Salim, Prof John Grundy, Prof Floyd Mueller

Outcome: Developed GustoSense which triggers playful sounds when one is eating and drinking, making consumption more enjoyable.

Eating pleasure can be enhanced by intelligent technology, yet designing such systems is understudied.

Our project revealed ways to support stimulation, hedonism and reflexivity in human-food interactions, aiming to help designers create playful food experiences.



TOWARDS AN UNDERSTANDING OF DEVELOPERS' PERCEPTIONS OF TRANSPARENCY IN SOFTWARE DEVELOPMENT: A PRELIMINARY STUDY

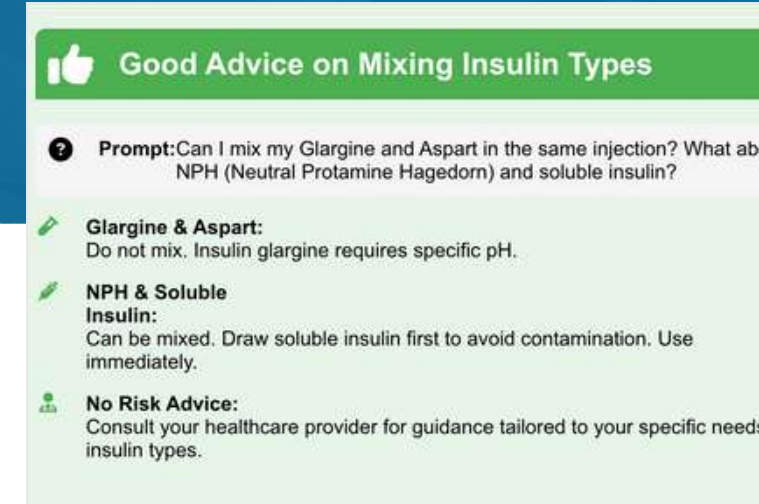
Lead: Dr Humphrey Obie

Collaborators: Juliet Ukwella, Dr Kashumi Madampe, Prof John Grundy, Dr Mojtaba Shahin

Outcome: Revealed that transparency is a fundamental value in software development, integral to building trust, promoting accountability and fostering ethical practices.

As software applications become more pervasive, the importance of considering human values in their development has gained significant attention.

We investigated developers' perceptions and experiences related to these values, with a focus on transparency.



GENERATIVE AI-POWERED DIABETES MANAGEMENT: TOWARDS SAFE, PERSONALISED AND CULTURALLY SENSITIVE SUPPORT FOR GLOBAL HEALTH

Lead: Dr Waqar Hussain

Collaborators: Prof John Grundy

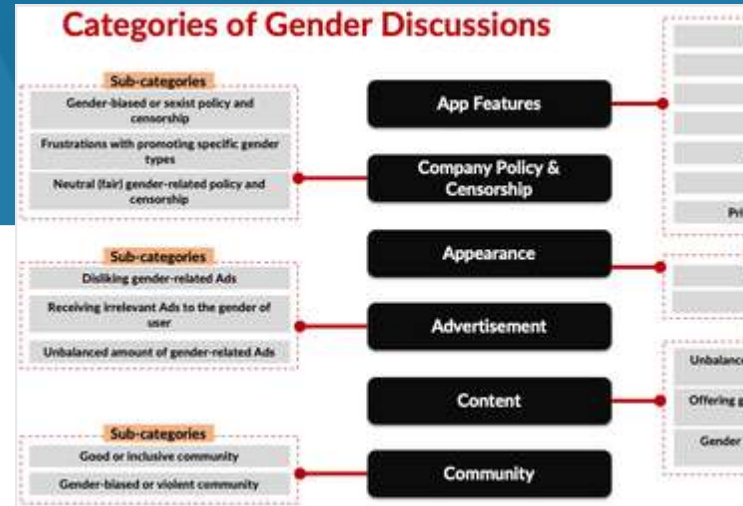
Outcome: Insights to improve AI conversational agents with 'common sense' for better diabetes management.

Effective diabetes self-management is crucial for global health. We evaluated three ChatGPT versions across 20 diabetes-related queries, revealing limitations in nuanced, individual-specific advice and cultural sensitivity.

These results coupled with an approach integrating medical supervision for high-risk situations will help us develop better AI tools for managing diseases.



SPECIAL MENTIONS



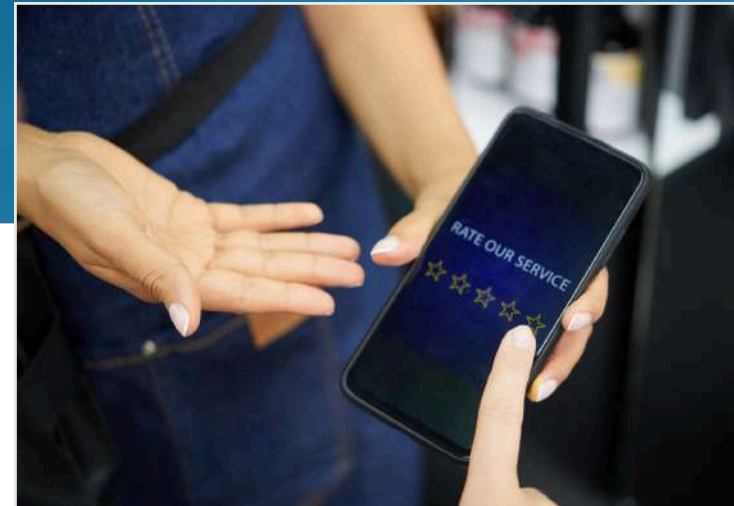
A STUDY OF GENDER DISCUSSIONS IN MOBILE APPS

Lead: Dr Mojtaba Shahin

Collaborators: Mansooreh Zahedi, Dr Hourieh Khalajzadeh, Ali Rezaei Nasab

Outcome: A classifier that automatically detects gender discussions in app reviews to help developers create more inclusive software.

Our project also categorised these gender concerns into a taxonomy that comprises six categories and 20 subcategories.



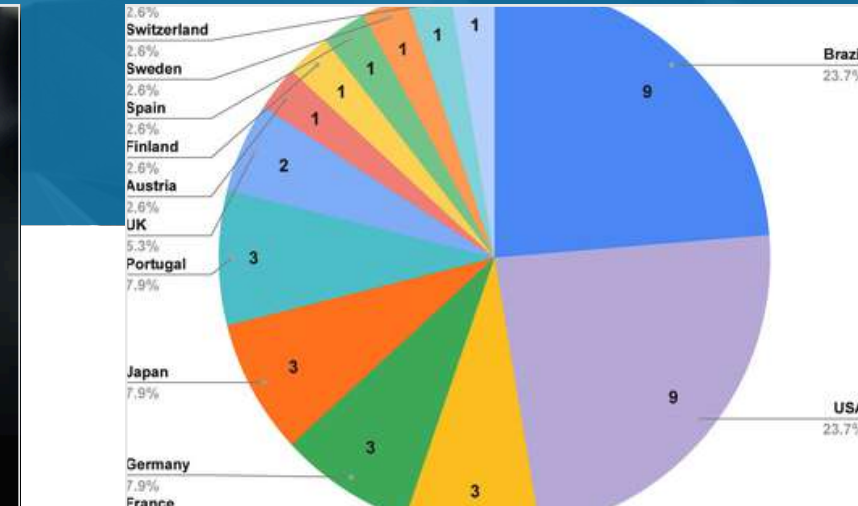
FAIRNESS CONCERNS IN APP REVIEWS: A STUDY ON AI-BASED MOBILE APPS

Leads: Dr Mojtaba Shahin, Dr Peng Liang

Collaborators: Ali Rezaei Nasab, Maedeh Dashti, Mansooreh Zahedi, Dr Hourieh Khalajzadeh, Dr Chetan Arora

Outcome: A pipeline that automatically detects, clusters and summarises fairness concerns in app reviews.

Given the proliferation of mobile apps, socio-technical issues such as unfair behaviours and outcomes in software can impact huge populations.



ACCESSIBILITY OF LOW-CODE APPROACHES: A SYSTEMATIC LITERATURE REVIEW

Lead: Dr Hourieh Khalajzadeh

Collaborators: Prof John Grundy

Outcome: A comprehensive systematic literature review which will help researchers and developers better understand and cater to accessibility issues.

Model-driven approaches are increasingly used in different domains to involve non-developers in the software development process. These largely depend on visual elements and thus might not be accessible for users with impairments.

We conducted a systematic review of existing literature on the accessibility of low-code approaches, their strengths, weaknesses and future research directions.

After reviewing and filtering 918 located studies, and conducting backward and forward snowballing, we identified 38 primary studies that were included in our analysis.



RESEARCHER PROJECTS



AI-BASED PROGRAMMING ASSISTANTS FOR PRIVACY-RELATED CODE DEVELOPMENT

Lead: Dr Kashumi Madampe

Collaborators: Dr Nalin Arachchilage (RMIT University), Prof John Grundy

Outcome: Insights into whether AI-based programming assistants can effectively generate privacy-related codes and areas for improvement.

Developers widely use off-the-shelf AI-based programming assistants for code development including that of privacy-related code – a task which developers often struggle with.



AI FOR PRODUCT MANAGEMENT AND PRODUCT MANAGEMENT FOR AI

Lead: Dr Kashumi Madampe

Collaborators: Prof Tony Wasserman (formerly from Carnegie Mellon University), Prof John Grundy

Outcome: Findings to produce a practical guide for AI product management.

The advancement of AI has led to increased competition and therefore, a race to automate with intelligence. This has surged the release of AI-driven software products.

We explored the role of managers in handling AI products and their own experiences working with AI-based tools.

Through in-depth interviews and public data, we generated a wealth of insights that will inform a practical guide for this community.



ADDRESSING THE AGONY OF RECRUITMENT FOR HUMAN-CENTRIC STUDIES

Lead: Dr Kashumi Madampe

Collaborators: Prof John Grundy, Dr Dulaji Hidellaarachchi, Shavindra Wickramathilaka, Judith Good (University of Amsterdam), Advait Sarkar (Microsoft Research), Reham Al Tamime (Qatar Computing Research Institute), Chris Brown and Shawal Khalid (Virginia Tech), Wei Zhou (Monash University), Jacome Cunha (University of Porto), Tommaso Turchi (University of Pisa), Ariful Islam Anik (University of Manitoba), Peng Kuang (Lund University), Yue Jiang (Aalto University)

Outcome: A greater understanding of the challenges researchers face when recruiting participants for human-centric studies and practical solutions.

Researchers conducting human-centric studies often struggle to recruit suitable participants for their studies due to reasons such as lack of access to prospects.

We investigated these issues with researchers and how they can be overcome. The findings will appear as an article in a practitioner-focused venue.



RESEARCHER PROJECTS

Perceptions of Data Exchange for Benefits				
Question	Strongly Agree (%)	Agree (%)	Disagree (%)	Strongly Disagree (%)
34. If companies give me a discount, it's a fair exchange for them to collect information about me without my knowledge.	3%	11%	33%	53%
35. If I log onto a store's Wi-Fi, it is fair for them to monitor what I'm doing online while I am in the store.	2%	5%	32%	61%
36. It's okay if a store where I shop uses the information it has about me to create a picture of me that improves the services they provide for me.	3%	4%	38%	55%

ASSESSING AUSTRALIANS' AWARENESS AND PERCEPTIONS OF ONLINE PRIVACY: A STUDY ON DATA PRACTICES AND DIGITAL CONSENT

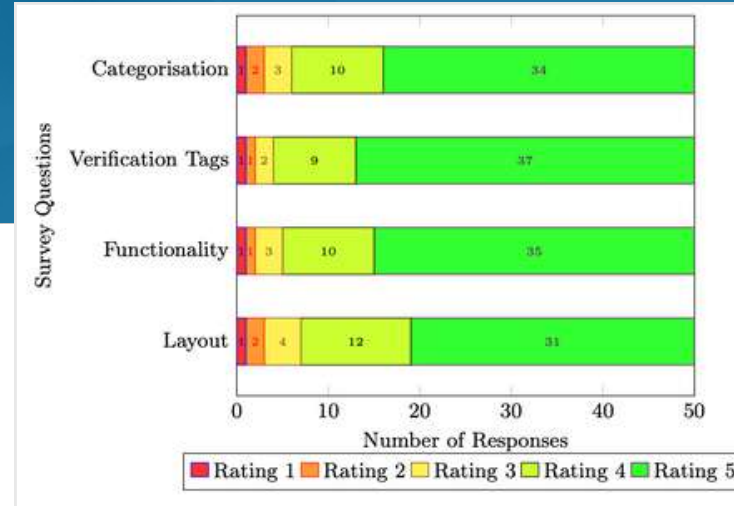
Lead: Dr Omar Haggag

Collaborators: Prof John Grundy, Dr Mohan Baruwal Chhetri (CSIRO's Data61)

Outcome: Uncovered a major knowledge gap and dissatisfaction with current privacy practices among Australians, calling for greater transparency and stronger regulatory frameworks.

We conducted a comprehensive survey of 239 Australians to assess their familiarity with data privacy regulations and their attitudes towards data exchange for benefits.

In this project, we also explored their concerns about online privacy as well as the effectiveness of privacy policies and their ability to protect personal data in an increasingly digital world.



ENHANCING MOBILE APP REVIEWS WITH STRUCTURED FEEDBACK AND NLP-DRIVEN ANALYSIS FOR IMPROVED DEVELOPER INSIGHTS AND REVIEW AUTHENTICITY

Lead: Dr Omar Haggag

Collaborators: Prof John Grundy, Prof Rashina Hoda

Outcome: A tested prototype solution to enhance mobile app review systems for improved feedback clarity, authenticity and actionable insights for developers.

Current limitations of mobile app review systems include unstructured feedback and fake reviews.

We proposed a structured review submission system that categorises feedback using predefined tags like "Usability" and "Features," alongside verification mechanisms, including "Verified Download" and "Verified Purchase" tags, for authenticity.

Our static prototype tested by 37 participants showed that the system improves review clarity, authenticity and trust while offering valuable and actionable feedback for developers.

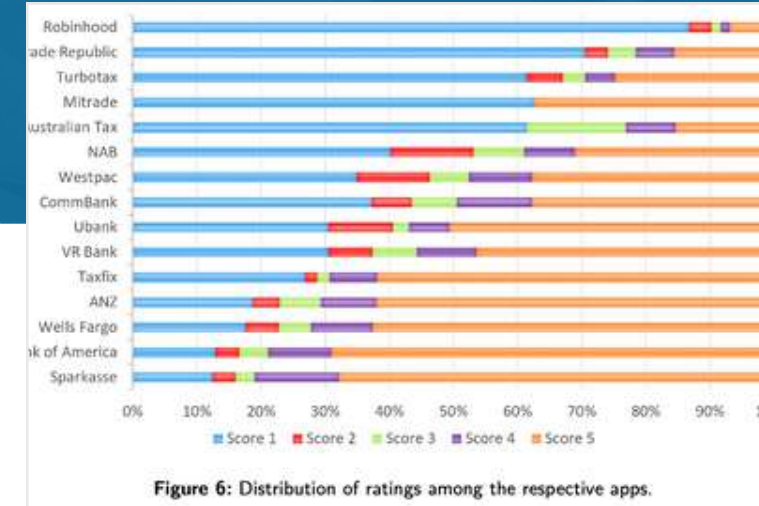


Figure 6: Distribution of ratings among the respective apps.

AN ANALYSIS OF PRIVACY REGULATIONS AND USER CONCERNS IN FINANCIAL MOBILE APPLICATIONS: IMPLICATIONS FOR TRANSPARENCY AND TRUST

Lead: Dr Omar Haggag

Collaborators: Alessandro Pedace, Shidong Pan (ANU), Prof John Grundy

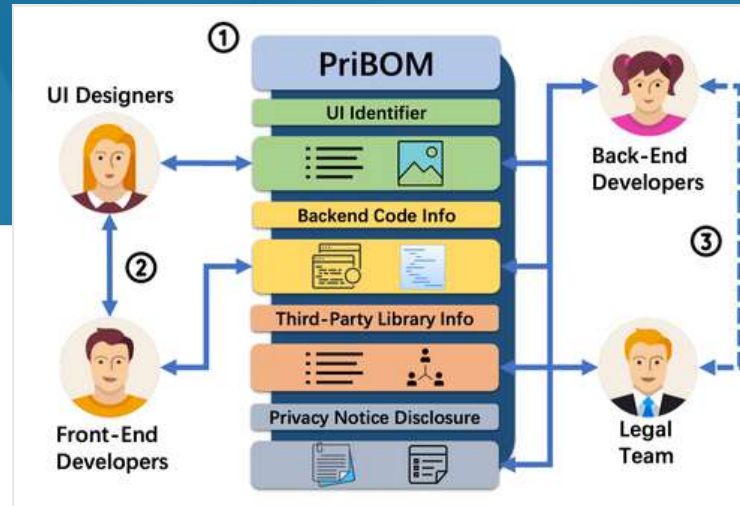
Outcome: Findings that emphasise the need for developers to simplify privacy policies, improve transparency and strengthen regulatory compliance to enhance user trust.

We analysed privacy regulations and user concerns regarding financial mobile applications in Germany, Australia and the US, evaluating how laws such as the GDPR, the Australian Privacy Act and various US state laws impact privacy policies, and how well these apps meet user expectations.

Our holistic analysis of reviews and readability assessments of privacy policies showed significant user dissatisfaction with the complexity of policies, excessive and invasive permissions requested, a lack of transparency and inadequate security measures.



RESEARCHER PROJECTS



PriBOM: ENHANCING COLLABORATIVE PRIVACY NOTICE GENERATION FOR MOBILE APP DEVELOPMENT

Lead: Zhen Tao (ANU)

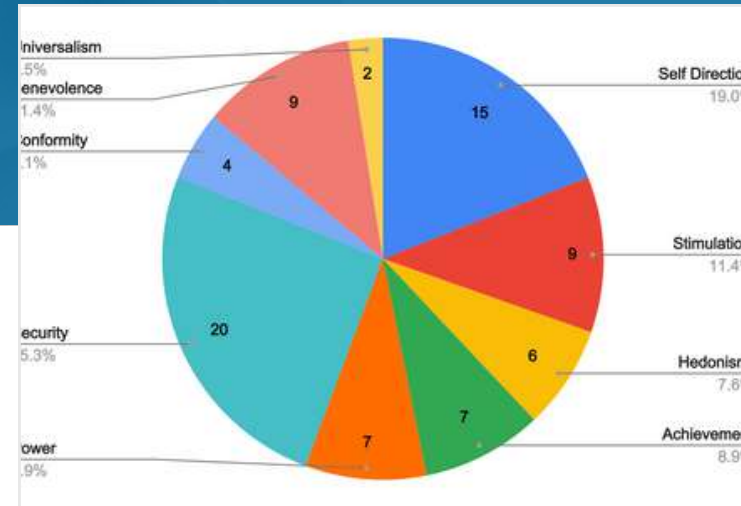
Collaborators: Shidong Pan (ANU), Zhenchang Xing (CSIRO's Data61), Xiaoyu Sun (ANU), Dr Omar Haggag, Prof John Grundy, Ze Shi Li (University of Victoria), Jingjie Li (University of Edinburgh), Liming Zhu (CSIRO's Data61)

Outcome: PriBOM, a systematic software engineering solution that facilitates transparency and collaboration by indexing privacy information related to UI widgets, permissions, third-party libraries and privacy notices.

Mobile app developers face a range of challenges when creating accurate and comprehensive privacy notices, especially in complex, collaborative environments.

Our solution PriBOM was evaluated by 150 participants and shown to significantly improve privacy notice generation and transparency in app development.

The approach we adopted ensures the traceability and trackability of privacy practices, helping developers, legal teams and other stakeholders manage privacy more efficiently.



IDENTIFYING HUMAN VALUES FROM MOTIVATIONAL GOAL MODELS: A CASE STUDY IN HEALTHCARE AND WELL-BEING SOFTWARE DEVELOPMENT

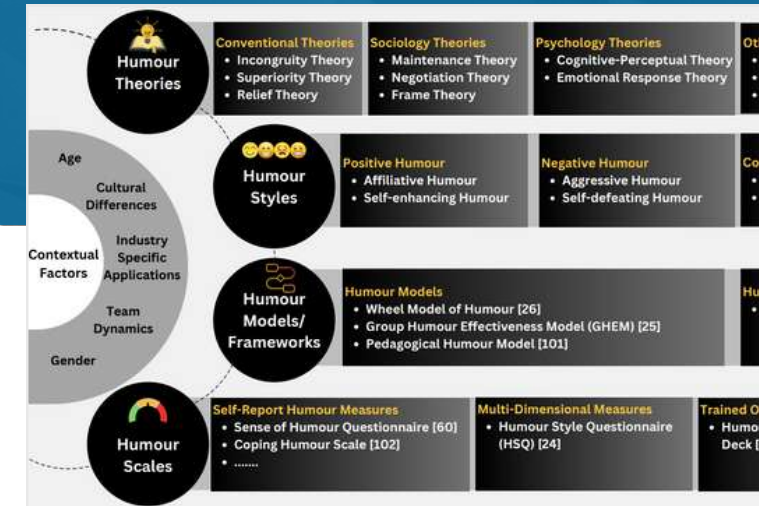
Lead: Dr Omar Haggag

Collaborators: Tahira Iqbal, Kuldar Taveter, Tarmo Strenze, John Alphonsus Matthews, Anu Piirisild (University of Tartu), Dr Waqar Hussain (CSIRO's Data61)

Outcome: Revealed that Security and Self-direction were the most important values in software development – highlighting the importance of user-centric design for uptake and acceptance.

We adopted Schwartz's theory of human values to analyse motivational goal models, with a focus on software development in healthcare and wellbeing for older adults.

Using the Pharaon project as a case study, our work emphasised how the identification of human values in requirements engineering can help address stakeholders' emotional and functional needs better.



THE ROLE OF HUMOUR IN SOFTWARE ENGINEERING (SE) – A PRELIMINARY LITERATURE REVIEW AND TAXONOMY

Lead: Dr Dulaji Hidellaarachchi

Collaborators: Prof John Grundy, Prof Rashina Hoda

Outcome: A taxonomy that elaborately categorises humour and insights into how this characteristic can be applied to benefit SE.

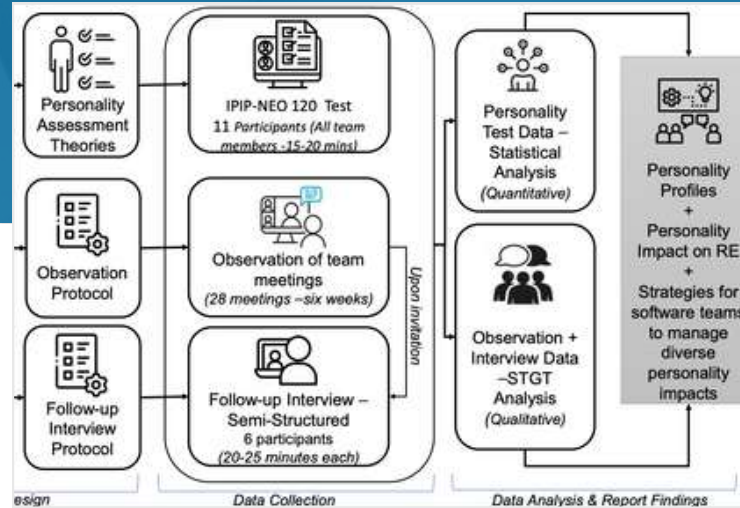
We explored the definition and use of humour in SE teams to boost productivity, improve communication and foster a positive work environment while emphasising how it can also be used to mitigate negative impacts.

Drawing from studies in psychology, sociology and organisational behaviour, our proposed taxonomy categorises humour into distinct theories, styles, models and scales, offering SE professionals and researchers a structured approach to understanding humour in their work.

We aim to build more cohesive, creative and psychologically-supportive SE environments through the strategic use of humour.



RESEARCHER PROJECTS



WHAT'S PERSONALITY GOT TO DO WITH IT? A CASE STUDY ON THE IMPACT OF PERSONALITY ON REQUIREMENTS ENGINEERING-RELATED ACTIVITIES

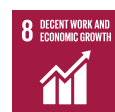
Lead: Dr Dulaji Hidellaarachchi

Collaborators: Prof John Grundy, Prof Rashina Hoda, Dr Ingo Mueller

Outcome: Guidance on how software teams can manage the impact of their members' diverse personalities on requirements engineering.

This project was an exploratory case study with an 11-member software development team. We observed 28 team meetings, conducted follow-up interviews and analysed their personality profiles using the IPIP-NEO 120 assessment tool developed on the standard five-factor model of personality.

We uncovered the potential impact that each member's characteristics could have on requirements engineering activities, such as agreeableness influencing the level of collaboration. Then we identified strategies that may be helpful in overcoming challenges like team conflicts that may arise.



PERFORMANCE APPRAISAL FOR REQUIREMENTS ENGINEERS

Supervisors: Dr Dulaji Hidellaarachchi, Prof John Grundy

Collaborators: Selina Tang, William Lay (FIT4701/02 students)

Outcome: An appraisal matrix for requirements engineering (RE) activities and a prototype app to support their evaluation.

Not much is known about the ideal traits for software practitioners completing RE-related activities such as requirements gathering and user story creation. This project identified and incorporated key metrics to assess the effectiveness and quality of RE practices.

The appraisal matrix was developed through an extensive literature review and interviews with industry professionals, pinpointing communication, time management, technical proficiency, and user story quality as the most influential metrics.

The following prototype app was designed to capture qualitative and quantitative data related to these metrics, providing a user-friendly interface for managers and engineers to evaluate performance. Key features include surveys and a dashboard that lets users analyse performance trends, identify areas for improvement and track progress over time.



END-USERS VS SOFTWARE PRACTITIONERS: RECRUITMENT CHALLENGES AND STRATEGIES IN SOFTWARE ENGINEERING RESEARCH

Leads: Wei Wang, Dr Dulaji Hidellaarachchi

Collaborators: Prof John Grundy, Dr Hourieh Khalajzadeh, Dr Humphrey Obie, Dr Anuradha Madugalla

Outcome: Practical knowledge to enhance the efficacy and inclusiveness of research practices for more robust software engineering research.

Our project explored first-hand key recruitment challenges encountered in software engineering research, focusing on two participant groups: end-users and software practitioners.

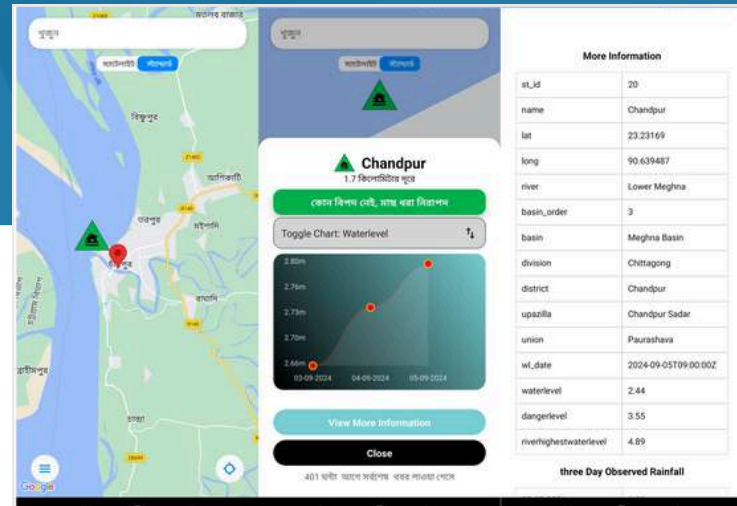
With end-users as an example, we had to navigate ensuring authenticity, maintaining engagement, achieving demographic diversity and addressing privacy concerns.

Conversely, we faced different challenges when recruiting software practitioners, including sourcing the right expertise, utilising online recruiting platforms, navigating time constraints, aligning incentives, obtaining a representative sample and coordinating with remote and distributed teams.

We then detailed the strategies employed to address these challenges for others to adopt.



RESEARCHER PROJECTS



DEVELOPING USER CENTRED DESIGN WITH END USERS OF LOW SOCIOECONOMIC BACKGROUNDS

Lead: Dr Tanjila Kanij

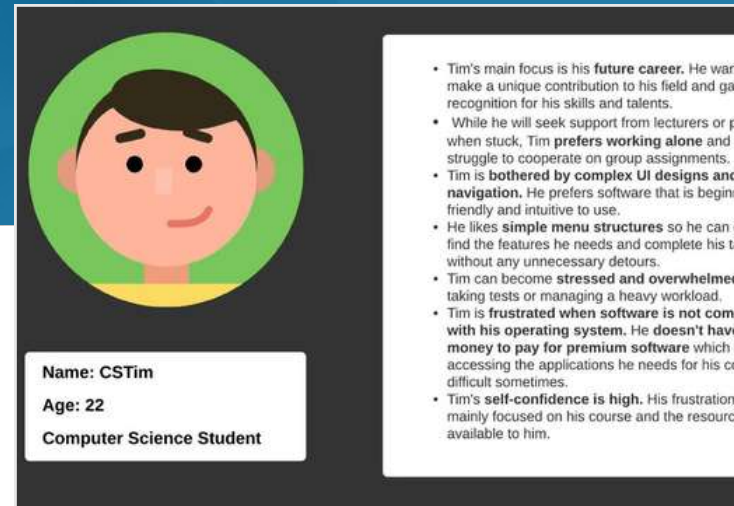
Collaborators: Prof John Grundy, A/Prof Gillian Oliver, Dr Misita Anwar, Dr Md. Khalid Hossain

Outcome: AI models to help extract and preserve tacit fishing knowledge from fisherfolk in rural Bangladesh.

As part of a large-scale ICT4D project (PROTIC II), we collaborated with artisanal fisherfolk in Bangladesh to empower them with digital technology.

In the project, we adopted design thinking and participatory design approaches to understand their challenges, characteristics and livelihood practices. We also collected the requirements of several software, designed prototypes and evaluated their applications with the fisherfolk.

With the community members as product owners, we used Scrum to develop one of the apps and created guidelines to help future researchers and developers also collaborate with this group and those of similar backgrounds.



DEVELOPING A GENDER INCLUSIVE COMPUTER SCIENCE AND SOFTWARE ENGINEERING EDUCATION ENVIRONMENT

Lead: Dr Tanjila Kanij

Collaborators: Prof John Grundy, Dr Vasudha Malhotra, Jonny Low, Lyndsey O'Brien

Outcome: Guidelines for universities, teachers and students to develop a gender-inclusive Computer Science and Software Engineering (CS/SE) education environment.

CS/SE education is a male-dominated area, with several factors preventing the participation of women such as discrimination.

To understand and develop solutions to the challenges around this, we conducted interviews and workshops with students and teachers. From these, we discovered several scenarios for when women students felt 'excluded' in the CS/SE classroom environment, when women teachers struggle to gain 'trust' from male students and when educational content and software are biased towards men.

These findings underpinned our guidelines for creating a more gender-inclusive environment.



PhD PROJECTS



THE ROLE OF EMPATHY IN SOFTWARE ENGINEERING

Lead: Hashini Gunatilake

Collaborators: Prof John Grundy, Prof Rashina Hoda, Dr Ingo Mueller

Outcome: Insights into how empathy influences interactions between software developers and their stakeholders.

Using Socio-Technical Grounded Theory we analysed data from interviews and identified the role of empathy in software engineering through the 6Cs theory: context, conditions, causes, consequences of empathy and its absence, contingencies for improving empathy and the covariances between these categories.

Our findings highlighted that empathy is a crucial factor influencing both the personal wellbeing of software practitioners and the overall success of software development practices.



VR INTEGRATION IN AUTHENTIC EDUCATIONAL SETTINGS

Lead: Ruchi Sembey

Collaborators: Prof John Grundy, A/Prof Roberto Martinez-Maldonado

Outcome: A practical framework for integrating VR into authentic educational settings and teaching practices.

Although VR is set to transform education, several technical, pedagogical and design challenges need to be addressed for it to be effectively integrated into university classrooms and teaching practices.

The framework we develop will be informed by VR experience sessions, design workshops, interviews and case-studies with diverse educational stakeholders.



ENHANCING DIGITAL HEALTH SOFTWARE FOR AGED CARE: REQUIREMENTS UNDERSTANDING WITH DIVERSE HUMAN ASPECTS AND PERSONALISED CARE DEVELOPMENT

Lead: Yuqing Xiao

Collaborators: Prof John Grundy, Prof Elizabeth Manias, Dr Anuradha Madugalla

Outcome: A novel approach for understanding, gathering and modelling requirements that reflect the diverse aspects of aged care digital health software users.

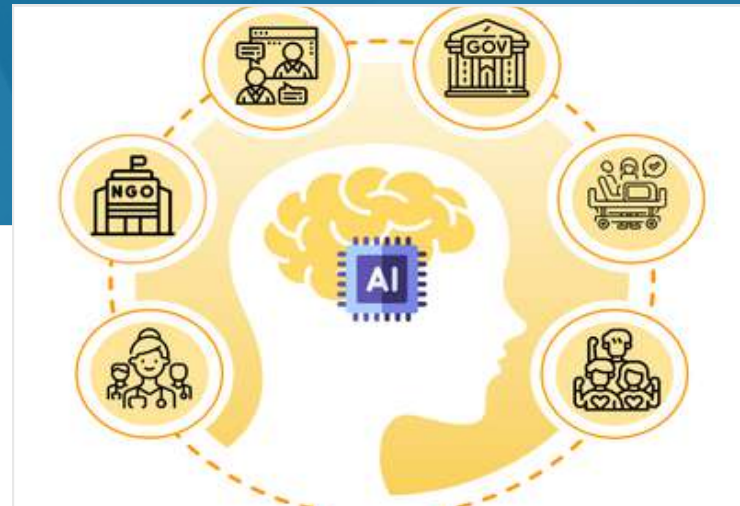
The rapid growth of the older adult population has surged interest in tech-supported aged care, where digital health software plays a crucial role.

It's integral to establish an understanding of its users' needs – older adults and their caregivers – such as emotions, social connections, physical health and mental wellbeing. User-centred development is also vital to success.

Previous studies on digital health aged care software inadequately address the diversity of human aspects and the needs arising from them. Additionally, the quality, depth and techniques used for requirements understanding and analysis are limited.



PhD PROJECTS



INVESTIGATION OF MENTAL HEALTH STAKEHOLDERS PERCEPTION AND CHALLENGES ON ARTIFICIAL INTELLIGENCE (AI)

Lead: Jonny Low

Collaborators: Prof John Grundy, Dr Roisin McNaney, A/Prof Judith Hope, Dr Marc Cheong

Outcome: A knowledge base to co-create digital tools that guide mental health professionals in leveraging AI.

AI holds significant promise in mental health by allowing for the prediction, classification and subgrouping of mental illnesses and issues. However, realising its full potential requires addressing challenges related to algorithm bias, privacy, transparency and ethical concerns.

Clinician trust and involvement are essential for the successful integration of AI into mental health care. But while clinicians recognise its potential, they remain sceptical about its ability to replicate human empathy and clinical judgement.

We investigated the perceptions and challenges faced by mental health stakeholders regarding AI, with the goal of co-developing digital tools that help mental health professionals in Australia employ AI in their practice.



DATA REPORTING STANDARDISATION FOR MENTALTAC

Lead: Jonny Low

Collaborators: Dr Agnes Haryanto (EMVIS), Dr Dulaji Hidellaarachch, Shareef Abdelal, Christian Zubcic, Kaitlyn Chan, Luke Weng

Outcome: Improvements to the existing Mental Health Triage App (MentalTAC) prototype by standardising the data reporting generated.

The digitisation of medical records has revolutionised patient care by enhancing accessibility, efficiency and accuracy of health information.

As healthcare organisations move towards electronic medical record (EMR) systems, the need for standardised data reporting becomes imperative.

Without standardised reporting protocols, the interoperability between different EMR systems is compromised, hindering seamless information exchange among healthcare providers. This fragmentation impedes clinical decision-making, patient safety and overall healthcare quality.

The data reporting standardisation we're producing is based on OMOP Common Data Model which is an open community data standard.



RUNTIME MONITORING FOR RESPONSIBLE MACHINE LEARNING (ML) USING MODEL-DRIVEN ENGINEERING

Lead: Hira Naveed

Collaborators: Prof John Grundy, Dr Chetan Arora, Dr Hourieh Khalajzadeh, Dr Omar Haggag

Outcome: A new domain-specific modelling language and model-driven approach for runtime monitoring of human-centric requirements violations to ensure responsible ML behaviour.

'Responsible ML' refers to developing, deploying and maintaining ML-based systems that adhere to human-centric requirements such as fairness, privacy, transparency, safety, accessibility and human values.

Meeting these requirements is essential for maintaining public trust and ensuring the success of ML-based systems.

However, many solutions overlook these due to a lack of awareness and tool support, the complexity of monitoring human-centric requirements and the effort required to develop and manage monitors for changing requirements.

Our modelling language and approach aim to overcome these challenges.



PhD PROJECTS



REQUIREMENTS-DRIVEN SOFTWARE QUALITY ASSURANCE (SQA) USING LARGE LANGUAGE MODELS (LLMs)

Lead: Fanyu Wang

Collaborators: Dr Chetan Arora, A/Prof Aldeida Aleti, Dr Kla Tantithamthavorn

Outcome: A method to use LLMs to generate test artefacts, bridging major gaps between SQA and requirements engineering to ensure the quality and reliability of end software.

SQA is a critical aspect of software development because it ensures that the final product meets specified requirements and performs reliably.

However, most SQA activities are often decoupled from the requirements engineering stage, leading to gaps in testing, quality issues and ultimately, major software project failures.

This project aims to bridge this gap by leveraging LLMs to generate test artefacts directly from natural language requirements (e.g. User stories).

By focusing on requirements-driven SQA, we can better align software requirements in testing processes.



THE ROLE OF LARGE LANGUAGE MODELS (LLMs) AND JUNIOR SOFTWARE DEVELOPERS – PERCEPTIONS, OPPORTUNITIES, AND IMPACT

Lead: Samuel Ferino

Collaborators: Prof Rashina Hoda, Prof John Grundy, A/Prof Christoph Treude (Singapore Management University)

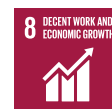
Outcome: Actionable insights into the perceptions and experiences of adopting LLM-based tools among predominantly junior software developers.

Code generation and assistance provided by LLM-based tools can hugely support software development. However, there are many concerns around how they will impact the job market and potentially cause a loss of employment.

Not knowing how to face this new AI-based era, junior developers are potentially more impacted.

We interviewed and surveyed software practitioners – focusing at a junior level – to understand their opinions and encounters with the opportunities and challenges related to LLM-based tools adoption.

Our results will help team leaders and managers by providing guidelines on supporting the new generation of software developers.



Awards and nominations

Our team's dedication to innovation, excellence and impact have been recognised through numerous awards and nominations in 2024. This recognition not only validates our efforts but also inspires us to continue pushing the boundaries and setting new standards.

DR ANU MADUGALLA

- Asian Australian Leadership Award (Education, Science & Medicine) (Finalist)

PROFESSOR JOHN GRUNDY

- Dean's Award for Excellence in Graduate Research Supervision
- Dean's Award for Research Excellence (Nomination)
- Distinguished Service Award, Computing Research & Education (CORE)
- Vice-Chancellor's Excellence Awards Graduate Research Supervision (STEM) (Special Commendation)

PROFESSOR RASHINA HODA

- Australia's Top Researcher in Software Systems, The Australian
- Guiding Star Mentorship Award, Women of Colour in STEM Awards

DR TANJILA KANIJ

- Dean's Award for Equity, Diversity and Inclusion (Community)

AASTHA PANT

- Faculty of Information Technology Postgraduate Publications Award

HASHINI GUNATILAKE

- SSC Catchy 3MT Titles
- Student Research Award (People's Choice), ASESS

RUCHI SEMBEY

- Advance HE Fellowship (UK)
- Dean's Award for Equity, Diversity and Inclusion (Community)
- Faculty of Information Technology Student Ambassador Award
- The Kathleen Fitzpatrick ARC Laureate Fellowship PhD Thinker
- Vice-Chancellor's Excellence Award for Equity, Diversity and Inclusion (Special Commendation)

HUMANISE LAB POSTER PRESENTATION

- 1st place - Hashini Gunatilake
- 2nd place - Fanyu Wang
- 3rd place - Hira Naveed, Mingyi Zhou

HUMANISE LAB ONE-SLIDE SHOWCASE

- 1st place - Shavindra Wickramathilaka
- 2nd place - Hashini Gunatilake
- 3rd place - Suyu Ma, Wei Wang



Explore our insights

Our research has culminated in an array of thought-provoking publications, workshops, presentations and talks at prestigious conferences – sharing our insights to advance the wider community.



SXSW Sydney

Diversifying Diversity: Beyond Buzzwords towards Inclusive Innovation

In her capacity as the Faculty's Associate Dean (Equity, Diversity and Inclusion), Professor Rashina Hoda presented a short talk called 'Diversifying Diversity: Beyond Buzzwords towards Inclusive Innovation' at premier tech, music, education and film festival [SXSW Sydney](#).

The session was a compelling story about representation, opportunity and awareness of bias in generative AI technologies, illustrated with insights from Professor Hoda's journey as a Muslim woman in STEM.

Through engaging anecdotes and interesting case studies, she spoke about how integral it is that developers of new technologies account for diversity and intersectionality in our increasingly globalised world. She stressed that equitable innovations can only be achieved by having diverse teams and consulting with people of multiple marginalised and underrepresented identities.

More presentations, workshops and talks

- [Reimagining Agile webinar](#): Professor Rashina Hoda with Jim Highsmith (Co-Founder, Agile Manifesto), Chet Hendrickson (Co-Creator, XP) and Angie Doyle (Head of Transformation, Nike).
- National Executive Assistants Conference keynote: Professor Rashina Hoda
- [Ada Lovelace Day – Celebrating Past, Present and Future Women in Computing](#): Ruchi Sembey
- [Driving Change for Women in Higher Education interview](#): Ruchi Sembey

Conference involvement

International Conference of Software Engineering (ICSE)

Focuses on the sharing of, and discourse around, innovations, trends, experiences and concerns in software engineering.

- [Organising Committee](#)
- [Co-chair Workshops Track](#)
- [Session Chair of Technical Briefings 4](#)
- [Technical Briefing on Socio-Technical Grounded Theory for Qualitative Data Analysis](#)
- [A First Look at Dark Mode in Real-World Android App](#)
- [Adaptive User Interfaces for Software Supporting Chronic Disease](#)
- [AlBugHunter: A Practical Tool for Predicting, Classifying and Repairing Software Vulnerabilities](#)
- [Automated Mapping of Adaptive App GUIs from Phones to TVs](#)
- [Dealing with Data Challenges when Delivering Data-Intensive Software Solutions](#)
- [Generating User Experience Based on Personas with AI Assistants](#)
- [GitHubInclusifier: Finding and Fixing Non-inclusive Language in GitHub Repositories](#)
- [Investigating White-Box Attacks for On-device Models](#)
- [REOM: A Reverse Engineering Framework for On-device TensorFlow-Lite \(TFLite\) Models](#)
- [Responding to Change Over Time: A Longitudinal Case Study on Changes in Coordination Mechanisms in Large-scale Agile](#)
- [Teaching Software Ethics to Future Software Engineers](#)

IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC)

Supports the design, theory, application and evaluation of computing technologies and languages that are easier to learn, use and understand.

- [Organising Committee Publicity & Social Media Chair, and Co-chair](#)
- [Chair Opening / Keynote 1 Chair](#)
- [Chair Keynote and Problem Formulation Session 1](#)
- [Chair Session 2 - Papers 1](#)
- [Chair Session 3 - Papers 1](#)
- [Chair Session 4 - Roadmapping](#)
- [Chair Session 8 - Human-centred Coding](#)
- [Program Committee Chair and members](#)
- [VLHCC2024 Opening Address](#)
- [VLHCC2024 Closing](#)
- [Development of an Adaptive User Support System Based on Multimodal Large Language Models](#)
- [End-Users vs Software Practitioners: Recruitment Challenges and Strategies in Software Engineering Research](#)
- [Recruiting Participants in Digital Health: Lessons from a Palliative Care Telehealth Project](#)
- [The Struggle is Real! The Agony of Recruiting Participants for Empirical Software Engineering Studies](#)

International Conference on Cooperative and Human Aspects of Software Engineering (CHASE)

Fosters discussions on empirical findings, theoretical models and research methods and tools for studying human and cooperative aspects in software engineering.

- [Enablers and Barriers of Empathy in Software Developer and User Interactions: A Mixed Methods Case Study](#)
- [Ethics in the Age of AI: An Analysis of AI Practitioners' Awareness and Challenges](#)
- [The Future of CHASE in the Age of AI](#)
- [What's Personality Got to Do with It? A Case Study on the Impact of Personality on Requirements Engineering-related Activities](#)

International Conference on Software Maintenance and Evolution (ICSME)

Facilitates discussions on the latest research and practices in software maintenance and evolution, focusing on improving the quality and longevity of software systems.

- [Program Committee member, Industry Track](#)

Conference involvement

International Conference on Model Driven Engineering Languages and Systems (MODELS)

Hones in on model-driven engineering, covering topics such as model-driven software development, model transformations and model-based systems engineering.

- [Towards Runtime Monitoring for Responsible Machine Learning Using Model-driven Engineering](#)

International Conference on Automated Software Engineering (ASE)

Brings together researchers and practitioners from academia and industry to discuss foundations, techniques and tools for automating the analysis, design, implementation, testing and maintenance of large software systems.

- [DynaMO: Protecting Mobile DL Models Through Coupling Obfuscated DL Operators](#)

International Workshop on AI Solutions for Software Engineering Challenges in Financial Firms (FinanSE)

Addresses the challenges faced by financial firms in software engineering and explores AI-based solutions to improve software development, maintenance and evolution in finance.

- [Augmented Agile: Human-centred AI-assisted Software Project Management](#)

International Conference on Evaluation of Novel Approaches to Software Engineering (ENASE)

Prime international forum to discuss and publish research findings and IT industry experiences related to novel software engineering approaches.

- [Human-centred eHealth Development: An Accessible Visual Modeling Tool](#)
- [Unlocking Adaptive User Experience with AI](#)

International Conference on Program Comprehension (ICPC)

Covers human activities in program comprehension and supportive technologies, promoting knowledge exchange and collaboration in this field.

- [Program Committee member, Early Research Achievements track](#)

Australasian Fire and Emergency Services Authorities Council (AFAC) Conference

Australasia's largest and most comprehensive emergency management conference and exhibition.

- [Providing Vulnerable Groups with Equal Access to Early Warnings in Australia: A Basic Human Right](#)

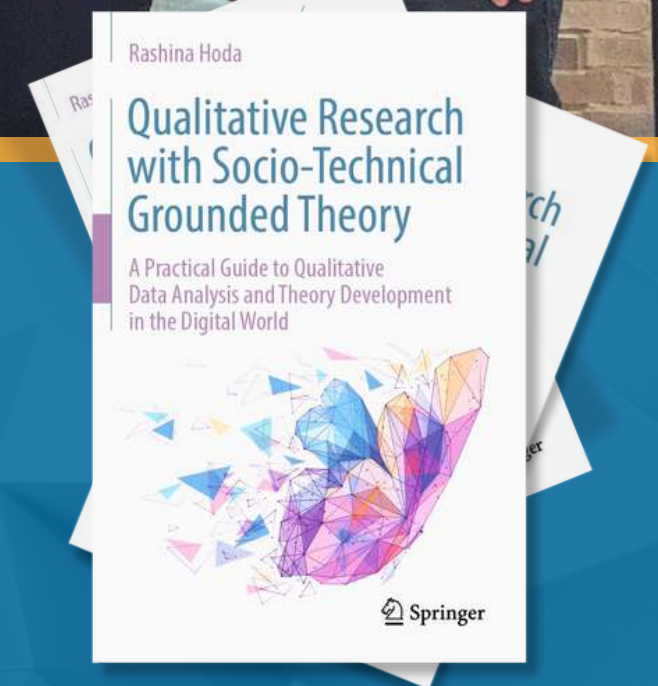


New book alert: Qualitative Research with Socio-Technical Grounded Theory

Named The Australian's 2025 top researcher in Software Systems nationally, Professor Rashina Hoda launched her first book which is a culmination of her leading expertise, learnings, experiences and ideas in using Socio-Technical Grounded Theory (STGT).

It covers the foundations of research, describes qualitative data processes and analyses all from the lens of STGT. It also presents advanced techniques of qualitative theory development using emergent or structured modes and explores the possible role of AI in tomorrow's qualitative research.

Available on [Amazon](#) and [Springer](#)*.



*Free download through the Monash subscription

Publications

- Ahmad, K., Arora, C., Abdelrazek, M., Grundy, J.C., Vasa, R. [Requirements Elicitation in the Age of AI: A Tool's Multi-system Journey](#). In Kaindl, H., Mannion, M., Maciaszek, L.A. (eds) Extended Papers from Evaluation of Novel Approaches to Software Engineering (ENASE). Communications in Computer and Information Science
- Akbari, N., Toosi, A., Khalajzadeh, H., Grundy, J.C. [iContinuum: An Emulation Toolkit for Intent-based Computing Across the Edge-to-Cloud Continuum](#). 2024 IEEE International Conference on Cloud Computing (CLOUD)
- Amarathunga, D.C., Parry, H., Grundy, J.C., Dorin, A. [A Predator-prey Population Dynamics Simulation for Biological Control of Frankliniella Occidentalis \(Western Flower Thrips\) by Orius Laevigatus in Strawberry Plants](#). Biological Control
- Arora, C., Grundy, J.C., Abdelrazek, M. [Advancing Requirements Engineering Through Generative AI: Assessing the Role of LLMs](#). Chapter in Effective Software Development with Generative Artificial Intelligence
- Arora, C., Grundy, J.C., Puli, L., Layton, N. [Towards Standards-compliant Assistive Technology Product Specifications via LLMs](#). 5th International Workshop on Requirements Engineering for Well-Being, Aging, and Health
- Chauhan, V., Arora, C., Khalajzadeh, H., Grundy, J.C. [How do Software Practitioners Perceive Human-centric Defects?](#) Information and Software Technology
- Chen, J., Chen, C., Hu, J., Grundy, J.C., Wang, Y., Chen, T., Zheng, Z. [Identifying Smart Contract Security Issues in Code Snippets from Stack Overflow](#). 2024 International Symposium on Software Testing and Analysis (ISSTA)
- Chen, J., Hu, J., Xia, X., Lo, D., Grundy, J.C., Chen, T., Gao, Z. [Angels or Demons: Investigating and Detecting Decentralized Financial Traps on Ethereum Smart Contracts](#). Automated Software Engineering
- Grundy, J., Kanij, T., Hoda, R., Khalajzadeh, H., Madugalla, A., McIntosh, J. [ED&I and SE: Challenges, Progress, and Lessons](#). in Equity, Diversity, and Inclusion in Software Engineering: Best Practices and Insights (pp. 17–35)
- Grundy, J.C., Kanij, T., McIntosh, J., Khalajzadeh, H., Mueller, I. [Developers' Perspective of Diverse End User Requirements](#). Equity, Diversity, and Inclusion in Software Engineering: Best Practices and Insights (Chapter 7)
- Gunatilake, H., Grundy, J.C., Hoda, R., Mueller, I. [Enablers and Barriers of Empathy in Software Developer and user Interactions: A Mixed Methods Case Study](#). ACM Transactions on Software Engineering and Methodology (TOSEM)
- Gunatilake, H., Grundy, J.C., Hoda, R., Mueller, I. [The Impact of Human Aspects on the Interactions Between Software Developers and End-Users in Software Engineering: A Systematic Literature Review](#). Information and Software Technology
- Haggag, O., Grundy, J.C., Abdelrazek, M. [An Analysis of Privacy Issues and Policies of eHealth Apps](#). 2024 International Conference on Evaluation of Novel Approaches to Software Engineering (ENASE)
- Haggag, O., Hoda, R., Grundy, J.C. [Towards Enhancing Mobile App Reviews: A Structured Approach to User Review Entry, Analysis and Verification](#). 2024 International Conference on Evaluation of Novel Approaches to Software Engineering (ENASE)

Publications

- Hidellaarachchi, D., Grundy, J.C., Hoda, R., Mueller, I. [The Impact of Personality on Requirements Engineering Activities; A Mixed-methods Study](#). Empirical Software Engineering
- Hidellaarachchi, D., Grundy, J., Hoda, R., Mueller, I. [What's Personality Got to Do with It? A Case Study on the Impact of Personality on Requirements Engineering-related Activities](#). Proceedings of the 2024 IEEE/ACM 17th International Conference on Cooperative and Human Aspects of Software Engineering
- Hou, X., Zhao, Y., Liu, Y., Yang, Z., Wang, K., Li, L., Luo, X., Lo, D., Grundy, J., Wang, H. [Large Language Models for Software Engineering: A Systematic Literature Review](#). ACM Transactions on Software Engineering and Methodology
- Huang, Y., Kanij, T., Madugalla, A., Arora, C., Grundy, J. [Unlocking Adaptive User Experiences with Generative AI](#). 2024 International Conference on Evaluation of Novel Approaches to Software Engineering (ENASE)
- Kanij, T., Grundy, J.C., McIntosh, J. [Enhancing Understanding and Addressing Gender Bias in IT/SE Job Advertisements](#). Journal of Systems and Software
- Karolia, D., Grundy, J.C., Kanij, T., McIntosh, J., Obie, H. [Lessons Learned from Persona Usage in Requirements Engineering Practice](#). 2024 International Conference on Requirements Engineering (RE)
- Karolita, D., Grundy, J.C., Kanij, T., Obie, H., McIntosh, J. [What Should be in a Persona for Use in Requirements Engineering](#), In: Kaindl, H., Mannion, M., Maciaszek, L.A. (eds). Extended Papers from Evaluation of Novel Approaches to Software Engineering (ENASE). Communications in Computer and Information Science
- Karolita, D., Grundy, J.C., Kanij, T., Obie, H., McIntosh, J., Peng, Y., Bulbul, R., Chen, W., Yu, Z., Tay, J., Liwsaree, P. [CRAFTER: A Persona Generation Tool for Requirements Engineering](#). 2024 International Conference on Evaluation of Novel Approaches to Software Engineering (ENASE)
- Liu, P., Li, L., Liu, K., McIntosh, S., Grundy, J.C. [Understanding the Quality and Evolution of Android App Build Systems](#). Journal of Software: Evolution and Process
- Liu, Y., Chen, X., Liu, P., Samhi, J., Grundy, J.C., Chen, C., Li, L. [Demystifying React Native Android Apps for Static Analysis](#). ACM Transactions on Software Engineering and Methodology
- Madampe, K., Grundy, J.C., Hoda, R., Obie, H. [The Struggle is Real! The Agony of Recruiting Participants for Empirical Software Engineering Studies](#). VL/HCC2024 Workshop on Addressing Challenges in Recruiting Participants for HCC Research Studies
- Madampe, K., Hoda, R., Grundy, J.C. [Addressing Bad Feelings in Agile Software Project Contexts](#). IEEE Software
- Madampe, K., Hoda, R., Grundy, J.C. [Supporting Emotional Intelligence, Productivity and Team Goals while Handling Software Requirements Changes](#). ACM Transactions on Software Engineering and Methodology
- Madugalla, A., Abrahams, J., Grundy, J. [Providing Vulnerable Groups with Equal Access to Early Warnings in Australia: A Basic Human Right](#). 2024 Australasian Fire And Emergency Services Authorities Council (AFAC) Conference
- Madugalla, A., Kanij, T., Hoda, R., Hidellaarachchi, D., Pant, A., Ferdousi, S., Grundy, J.C. [Challenges, Adaptations, and Fringe Benefits of Conducting Software Engineering Research with Human Participants during the COVID-19 Pandemic](#). Empirical Software Engineering
- Naveed, H., Arora, C., Khalajzadeh, H., Grundy, J.C., Haggag, O. [Model-driven Engineering for Machine Learning Components: A Systematic Literature Review](#). Information and Software Technology
- Naveed, H., Grundy, J.C., Arora, C., Haggag, O. [Towards Runtime Monitoring for Responsible Machine Learning using Model-driven Engineering](#). 27th ACM / IEEE International Conference on Model Driven Engineering Languages and Systems (MODELS)
- Nguyen, V., Le, T., Tantithamthavorn, C., Grundy, J.C., Phung, D. [Deep Domain Adaptation With Max-margin Principle for Cross-project Imbalanced Software Vulnerability Detection](#). ACM Transactions on Software Engineering and Methodology

Publications

- Pink, S., Quilty, E., Grundy, J.C., Hoda, R. [Trust, Artificial Intelligence and Software Practitioners: An Interdisciplinary Agenda](#). AI & Society
- Sembey, R., Hoda, R., Grundy, J.C. [Emerging Technologies in Higher Education Assessment and Feedback Practices: A Systematic Literature Review](#). Journal of Systems & Software
- Shamsujjoha, M., Grundy, J.C., Khalajzadeh, H., Lu, Q., Li, L. [Developer and End-user Perspectives on Addressing Human Aspects in Mobile eHealth Apps](#). Information and Software Technology
- Shen, J., Khalajzadeh, H., Madugalla, A. [Human-centered e-Health Development: An Accessible Visual Modelling Tool](#). 2024 International Conference on Evaluation of Novel Approaches to Software Engineering (ENASE)
- Todd, L., Grundy, J.C., Treude, C. [GitHubInclusifier: Finding and Fixing Non-inclusive Language in GitHub Repositories](#). 46th IEEE/ACM International Conference on Software Engineering (ICSE)
- Wang, H., Gao, Z., Bi, T., Grundy, J.C., Wang, X., Wu, M., Yang, X. [What Makes a Good TODO Comment?](#) ACM Transactions on Software Engineering and Methodology
- Wang, H., Gao, Z., Hu, X., Lo, D., Grundy, J.C., Wang, X. [Just-In-Time TODO-Missed Commits Detection](#). IEEE Transactions on Software Engineering
- Wang, W., Hidellaarachchi, D., Grundy, J., Khalajzadeh, H., Madugalla, A., Obie, H. [End-users vs Software Practitioners: Recruitment Challenges and Strategies in Software Engineering Research](#). Workshop on Addressing Challenges in Recruiting Participants for HCC Research Studies (VL/HCC)
- Wang, W., Khalajzadeh, H., Grundy, J.C., Madugalla, A., Obie, H.O. [Adaptive User Interfaces for Software Supporting Chronic Disease](#). 46th IEEE/ACM International Conference on Software Engineering (ICSE)
- Wang, W., Li, L., Wickramathilaka, S., Grundy, J.C., Khalajzadeh, H., Madugalla, A., Obie, H. [Development of an Adaptive User Support System. Based on Multimodal Large Language Models](#). 2024 IEEE International Symposium on Visual Languages and Human-centric Computing (VL/HCC)
- Wang, Y., Obie, H., Li, Z., Salim, F., Grundy, J.C., Mueller, F. [GustosonicSense: Towards Understanding the Design of Playful Gustosonic Eating Experiences](#). 2024 ACM Conference on Computer-Human Interaction (CHI)
- Wen, L., Bao, L., Chen, J., Grundy, J.C., Xia, X., Yang, X. [Market Manipulation of Cryptocurrencies: Evidence from Social Media and Transaction Data](#). ACM Transactions on Internet Technology
- Yu, X., Zhang, Z., Niu, F., Hu, X., Xia, X., Grundy, J.C. [What Makes a High-quality Training Dataset for Large Language Models: A Practitioners' Perspective](#), 2024 IEEE/ACM International Conference on Automated Software Engineering (ASE)
- Zhou, M., Gao, X., Chen, X., Chen, C., Grundy, J.C., Li, L. [DynaMO: Protecting Mobile DL Models Through Coupling Obfuscated DL Operators](#), 2024 IEEE/ACM International Conference on Automated Software Engineering
- Zhou, M., Gao, X., Liu, P., Grundy, J.C., Chen, C., Chen, X., Li, L. [Model-less Is The Best Model: Generating Pure Code Implementations to Replace On-device DL Models](#). 2024 International Symposium on Software Testing and Analysis (ISSTA)

Grants

New grants in 2024

Co-Designing Sovereign Information Solutions for Climate Action with Indigenous Communities in Indonesia, 34K
Monash Business School Interdisciplinary Research (IDR) SEED Fund: Adaptive Maps for Cognitive Impairment, \$15K
Monash Indigenous Innovation Challenge: Wunan Foundation Project on Social Capital Development, \$30K
National Intelligence Discovery Grants (NIDG) Program: Balancing Act: Navigating Privacy, Trust, and Security in the Adoption of Emerging Technologies by Australian National Security and Law Enforcement, \$365K
Monash Inter-Faculty Seed Grant: Enhancing Judicial Efficiency through Artificial Intelligence in Malaysia and Bangladesh, \$19.8K
Monash Institute of Medical Engineering SEED fund: Digital Tools for Blind/low Vision People for Independent Health Management, \$30K
Medical Research Future Fund (MRFF) Applied Research in Health Grant: The Role of Caregivers in Recognition and Response to Serious Childhood Illness: A Mixed-methods Study, \$1.5M



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Existing grants

2024, Australasian Software Engineering Summer School (ASESS) 2024, \$10K (USD)
2024, Incubator Grant \$10K
2023-2026, RAISE: Creating Responsible AI Software Engineering Capability, CSIRO Next Generation AI Graduates Programme, 2nd CI of 7, \$750K over 3.5 years
2023-2024, Monash Institute of Medical Engineering Seed Fund Grant, \$30K
2022-2025, Building National Cybersecurity Capabilities for Digital Transformation in Manufacturing, CSIRO Next Generation Technology Graduates Programme, 3rd CI of 7, \$1.1M over 3.5 years
2022-2025, Medical Research Future Fund Optimising the Delivery of Antenatal Interventions in Public Healthcare, \$1.4M
2021-2026, ARC Industrial Transformation Training Centre for Optimal Ageing, \$5.5M over 5 years
2020-2027, Building 4.0 Co-operative Research Centre: Better Buildings, New Efficiencies Through Technology and Collaboration, one of ~40 CIs, \$28M + Industry, ~\$15M over 7 years
2020-2024, ARC Laureate Fellowship, Human-centric, Model-driven Software Engineering, \$3M over 5 years








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We're always looking for new collaborations around student placements, case studies, R&D projects and consulting.

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LET'S GET STARTED



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