



Research Fellow

Department/Unit	Digital Health (Software Engineering)
Faculty/Division	Information Technology
Classification	Level B
Work location	Monash Medical Centre, Clayton campus
Date document created or updated	April 2018

Organisational Context

Everyone needs a platform to launch a satisfying career. At Monash, we give you the space and support to take your career in all kinds of exciting new directions. You'll have access to quality research, infrastructure and learning facilities, opportunities to collaborate internationally, as well as the grants you'll need to publish your work. We're a university full of energetic and enthusiastic minds, driven to challenge what's expected, expand what we know, and learn from other inspiring, empowering thinkers. Discover more at www.monash.edu.

The Faculty of Information Technology (IT)

IT underpins everything in modern society, so it's no surprise that Monash has dedicated a whole faculty just to teaching and learning IT. In fact, we're the only university in the prestigious Group of Eight that has. For us, IT isn't just a side interest – it's what we do. Every day we live and breathe IT. We're witnessing - and shaping - how it's helping us meet the global challenges of our time, and having a meaningful impact on our lives.

The Faculty comprises 130 academic faculty members and casual lecturers, numerous professional staff and many thousands of undergraduate and postgraduate students. It offers vibrant and creative programs across all core IT and related subject areas, and in addition has extensive research efforts organized around core competency areas as follows: Systems and Cybersecurity, Data Science, Education, Computer-Human Interaction and Creativity, and Organizational and Social Informatics.

The **Digital Health** theme in the Faculty of IT draws on capabilities in all the above areas, and is further grounded in collaborations with a range of other faculties across Monash, including Medicine, Nursing and Health Sciences; Engineering; Business and Economics; Art, Design and Architecture (MADA); Science and Arts.

This position is part of an exciting new initiative between the Faculty of IT, MADA and the Faculty of Medicine to assemble a multi-disciplinary team of Design, IT and Clinical researchers, expert in the fields of UX/UI Design, IT and Medicine. The focus of collaboration is on human-medical system interfaces, developing and designing unique control methods for clinicians working with medical imaging and cardiac intervention systems in 'no touch' sterile environments.

This collaboration is a first step towards the expectation of the state of the art facility showcasing translated research from Monash University that is being built in the Victoria Heart Hospital (VHH). The VHH is scheduled for completion in 2020 - in order to meet the timeframe, this core team of researchers is being assembled and located at the Monash Medical Centre to start working with stakeholders in cardiology to identify challenges to inform innovation in the meantime. This will allow the teams involved to learn into the space, understand challenges, issues, and potential while starting the iterative innovation cycle and proof points of success.

Position Purpose

A Level B research-only academic is expected to carry out independent and/or team research within the field in which they are appointed and to carry out activities to develop their research expertise relevant to the particular field of research.

The Software Engineering Research Fellow, appointed by the Faculty of IT, will be focused on researching and creating novel prototype and production level software to support the high level objectives of the clinical staff in the above-mentioned cardiac care contexts. They will also work closely and in direct collaboration with the equivalent post-doctoral appointee undertaking design research, both of these appointees will work under the direct supervision of the key clinical staff, whilst the overarching direction of the research will be governed by a specialist steering committee.

The initiative acts a stepping stone for embedding post-doctoral IT, engineering and design researchers within a busy clinical department. The expectation is that as the embedded individuals become familiar with clinical cardiology practice and our ongoing translational research interests. The integration of diverse disciplines within the clinical environment should also lead to the emergence of creative methods for use of technology within the healthcare setting. The role will be primarily based at Monash Medical Centre (MMC), Clayton.

Reporting Line: The position reports to Prof James Cameron. Monash Heart (at MMC Clayton)

Supervisory Responsibilities: Not applicable

Financial Delegation: Not applicable

Budget Responsibilities: Not applicable

Key Responsibilities

Specific duties required of a Level B research-only academic may include:

1. Researching novel interaction paradigms for translation into working software
2. Researching novel software architectures for translation into working software
3. Literature reviews
4. Development of prototype and production level software
5. User and other testing of developed software
6. Documentation of software outputs, and of testing and research outcomes
7. Writing of reports, presentations and academic papers
8. Delivery of verbal presentations
9. Writing additional grant applications

Key Selection Criteria

Education/Qualifications

1. The appointee will have:
 - A doctoral qualification in the relevant discipline area or equivalent qualifications or research experience

Knowledge and Skills

2. Experience in complex software design and development
3. Extensive experience in a number of application development environments
4. Experience in a range of database paradigms and communication protocols
5. Relevant experience in the development of human-centred computer interfaces. Specific experience in the development of human-medical system interfaces, or complex visualisation or control systems is highly valued
6. Experience in interdisciplinary and industry collaboration, and in translational research activities

7. The ability to work both independently and as part of an inter-disciplinary research team, positively contributing to meetings, committees and forums and working in a collegiate manner with other staff in the workplace
8. High level organisational skills, with demonstrated capacity to establish and achieve goals both independently and in a team context
9. Demonstrated software engineering research proposal and report preparation skills; including a solid track record in traditional and non-traditional research outputs
10. A willingness to comply with relevant Human Research Ethics Committee (HREC) and patient confidentiality requirements

Other Job-Related Information

- Travel to other campuses of the University may be required
- There may be a requirement to work additional hours from time to time
- There may be peak periods of work during which taking of leave may be restricted

Legal Compliance

Ensure you are aware of and adhere to legislation and university policy relevant to the duties undertaken, including: Equal Employment Opportunity, supporting equity and fairness; Occupational Health and Safety, supporting a safe workplace; Conflict of Interest (including Conflict of Interest in Research); Paid Outside Work; Privacy; Research Conduct; and Staff/Student Relationships.