Research Fellow (Multimodal Interfaces & Behaviour Analytics)

Department/Unit	Information Technology
Faculty/Division	Caulfield School of Information Technology
Classification	Level B
Work location	Caulfield campus
Date document created or updated	6/11/2017

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** aims to lead global IT research and education. Our strong reputation and international profile attracts the best students worldwide and we offer a range of accredited courses that transform our graduates into highly skilled and sought after IT professionals, equipped to work globally. Our research is multi-disciplinary, multi-campus and multi-national, giving us a unique capacity to reach out further and deeper than any other institution in Australia. Our research priorities are both technically ambitious and embedded in everyday life.

To learn more about the Faculty and the exciting work we do, please visit www.infotech.monash.edu.au/

The Human Computer Interaction (HCI) group designs, builds, and evaluates state-of-the-art interface technologies. Our multidisciplinary interests span computer science and engineering, cognitive and learning sciences, communications, medicine and health, media design, and other topics. Our work is based on empirical science, statistics, deep learning and data analytics, and diverse HCI methods. The HCI group has partnerships with CSIRO-Data61, and an expanding collection of industry partners. The HCI area director is Professor Sharon Oviatt, an ACM Fellow and international pioneer in human-centered, mobile, and multimodal interfaces.

Experimental Labs & Design Spaces: The university has made recent strategic investments in facilities for prototyping innovative concepts, collecting and analyzing data, and displaying digital installations and interactive media—including sensiLab (supporting tangible, wearable, augmented and virtual reality, multimodal-multimedia, maker-space), Immersive Visualization platform and Analytics lab, the MADA Design building and space, Centre for Data Science, and ARC Centre of Excellence on Integrative Brain function (pioneering new multimodal imaging techniques for data exploration). The university currently is investing in HCI group facilities for prototyping and developing new mobile, multimodal and multisensory interfaces, capturing and analyzing human multimodal interaction (e.g., whole-body activity, speech), and predicting users' cognitive and health status.

Position purpose

The Faculty of Information Technology at Monash University is establishing a new group in Human Computer Interaction (HCI) and creative technologies.

This position involves research on predicting user cognition and health status, based on analysis of different modalities, such as speech, writing, images, sensors, during naturally occurring activities. These analyses involve exploring predictive patterns at the signal, activity pattern, lexical, and/or transactional levels.

The position will be part of the rapid expansion of a multidisciplinary group with expertise in areas such as mobile and multimodal-multisensor interfaces, agent-based conversational interfaces, brain-computer and adaptive interfaces, wearable and contextually-aware personalized interfaces, education and health interfaces, data analytics for predicting user cognition and health status, and other topics.

As a Level B research-only academic, the incumbent is expected to carry out independent and/or team research within this field of specialism and to carry out activities to continue to develop their research expertise.

Reporting Line: The position reports to the HCI Area Director

Supervisory responsibilities: Not applicable

Financial delegation and/or budget responsibilities: Not applicable

Key responsibilities

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

1. Conduct research as a member of a team and independently, and successfully publish conference and journal papers on research in top journals
2. Engage in professional research activities such as presenting at conferences, to funders, and at other professional meetings within the candidate's field of expertise
3. Contribute to occasional teaching, team teaching, and guest lecturing within the relevant field of research to build professional skills
4. Co-supervise or supervise major honours or postgraduate research projects within the candidate's area of research
5. Mentor or guide more junior members of the HCI research group
6. Contribute to preparing research proposal submissions to external funding bodies
7. Contribute to research and infrastructure functions, such as laboratory development and leading the group's regular lab meetings
8. Attend meetings involving research or organizational responsibilities in the Faculty of Information Technology or University
9. Engage in occasional professional service work, such as conference committees and organization, to build professional skills and establish a social network

Key selection criteria

Education/Qualifications

1. The appointee will have:
    - a postdoctoral qualification in computer science, engineering, information sciences, cognitive or linguistic sciences, or a related field and proven relevant experience, or
    - an equivalent combination of qualifications and research experience

Knowledge and Skills

2. Training in HCI, multimodal interfaces, data science and analytics, modelling of human behaviour & communication
3. Experience collecting and analyzing speech, images, handwriting, and/or other sensor data
4. Experience applying machine learning/deep learning, empirical/statistical, or other analysis methods
5. Experience conducting signal and/or linguistic analyses of one or more modality data sources
6. Demonstrated manuscript and research proposal preparation skills, including a solid track record of refereed research publications in top venues
7. Ability to supervise and collaborate with major honours or postgraduate students within the candidate's research area, and to successfully mentor research staff
8. Excellent interpersonal skills, teamwork skills, and oral and written communication skills with the ability to work independently in a research environment, and as part of an inter-disciplinary team
9. Strong leadership, initiative, and organisational skills, with demonstrated capacity to establish and achieve goals

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.