MONASH University

MONASH INFORMATION TECHNOLOGY

LABORATORY FOR DIALOGUE RESEARCH

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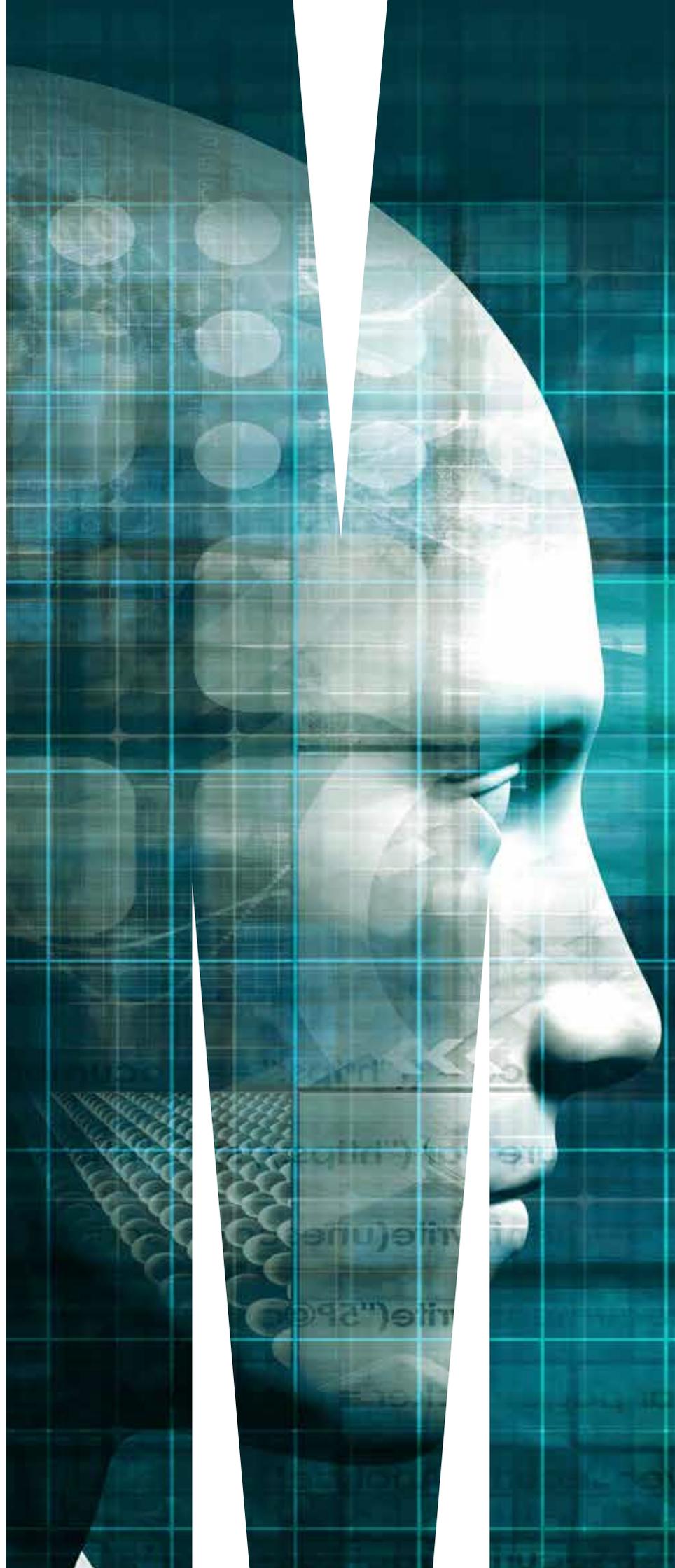
LABORATORY FOR DIALOGUE RESEARCH

MULTIPLE OPENINGS

FACULTY (ALL LEVELS), POSTDOCS, PHD STUDENTS

The Faculty of Information Technology (*monash.edu/it*) at Monash University in Melbourne Australia is establishing a new research group, **The Laboratory for Dialogue Research** led by Professor Phil Cohen, with openings for exceptionally accomplished, creative, and energetic faculty (all levels), postdocs, and PhD students. Selected candidates will have the opportunity to join a rapidly growing Faculty of Information Technology.

For more information on the Faculty of IT's main research areas and vigorous recruitment plans to add 50 new faculty, see *monash.edu/it/about-us/recruiting-exceptional-academics*.

This announcement represents one area of expansion.

LABORATORY FOR DIALOGUE RESEARCH (LDR)

Although the topic of dialogue has been studied in NLP for decades, only recently have the prerequisite speech recognition and natural language processing technologies been sufficiently accurate to enable dialogue systems to succeed. As a result, there is now tremendous interest from a wide variety of commercial and government organizations in AI assistants with dialogue capabilities. Yet the dialogue management component is the least well understood.

We view dialogue as a special case of collaboration, so human-machine dialogue will be treated as a specialization of human-AI collaboration. LDR will engage in research to design, build, and evaluate state-of-the-art dialogue systems based on a variety of AI technologies such as Natural Language Processing (semantic parsing, generation), Machine Learning (deep learning, reinforcement learning, Bayesian networks, etc.), Multi-Agent Systems (planning, plan recognition, collaboration), and Multimodal Interaction (fusion of spoken language, vision, gesture), etc. No one technology will suffice, so LDR will investigate intelligent hybrid architectures. We are interested in applying dialogue technology to many areas, such as digital assistants, human-robot interaction, digital healthcare, customer service, Internet of Things, automotive human machine interaction, etc. We are also very interested in studying human-human dialogues, such as in meetings, where computers can provide support.

The LDR has close partnerships with Monash's new HCI Group, its renowned Centre for Data Science, the Engineering School, and with numerous universities in Australia and worldwide. Importantly, we plan to engage with interested industry, philanthropic, and government partners on problem, data, and tool selection and development of scalable approaches. LDR's Director is Prof. Phil Cohen, a AAAI Fellow and internationally known pioneer in natural language dialogue, multiagent systems, and multimodal interaction. The project that ultimately became Siri™ started in his laboratory at SRI International in 1993.

FACULTY/POSTDOCS/ PHD STUDENTS

Faculty/Postdocs/PhD students are sought in the areas of:
1) Natural Language Processing,
2) Dialogue Management,
3) Planning, Plan recognition, Collaboration,
4) Reasoning,
5) Machine Learning,
6) Multimodal Interaction

FACULTY APPLICANT REQUIREMENTS

Interested applicants should have a PhD in computer science, computer/electrical engineering, information sciences, cognitive or linguistic sciences, or related field, and for faculty, several years of post-PhD research or work experience. All candidates must have a strong publication record in top conferences and journals, excellent teamwork and communication/writing skills, and teaching/mentoring experience. Evidence of grants and industry partnerships is preferred.

POSITION AND COMPENSATION

All faculty positions are full-time for 12 months a year, with competitive salary and benefits (see: *http://adm. monash.edu.au/enterprise-agreements/academic-professional-2014/s1-academic-salary-rates.html*), including 17% superannuation retirement fund contribution, health insurance options, relocation allowance, and generous start-up package with reduced teaching. The academic year begins in late Feb., with semester 2 starting late July, but start date is negotiable.

POSTDOCS REQUIREMENTS

PhD in computer science (especially AI) engineering, information sciences, cognitive or linguistic sciences, or related field; Training in natural language processing (semantic parsing, generation, dialogue), multiagent systems (planning, plan recognition), reasoning, machine learning (deep learning, reinforcement learning); Strong interpersonal, teamwork, communication and writing skills, system development experience. Prefer candidate with 2-3 years post-PhD research or work experience, though exceptional new PhDs are most welcome to apply.

POSITION & COMPENSATION

Postdoc positions are full-time for 3 years, with competitive salary (Academic level A-B and benefits, including 17% superannuation retirement contribution, health insurance options, relocation, and seed funds for equipment and travel. Start date is negotiable.

TO APPLY FOR FACULTY/POSTDOC POSITIONS

Required application materials for Faculty and Postdocs include:
1) cover letter (indicating application area 1-6 above, planned research for the near future, and date of availability);
2) current CV with publication list, research and (for faculty) teaching interests, and 3-5 references with email/phone contact;
3) three representative publications. Monash has a Women in IT Program, and participates in the Athena Swan Charter to enhance gender equality in STEM disciplines. We especially welcome talented female, minority, and international applicants.

For further information, or submission instructions, email Professor Phil Cohen (with "Faculty/Postdoc Application" in header) at: *philip.cohen@monash.edu.*

PHD STUDENTS

SCHOLARSHIP SUPPORT

The funded PhD positions are for full-time study at the Monash Caulfield campus in Melbourne, to begin during the 2019 academic year. They include a living allowance stipend (non-taxable $27,353 pa 2019 rate), tuition scholarship and Overseas Student Health Coverage for international students.

Full-time Monash Graduate Scholarships for PhD students are for 3 to 3.5 years. PhD students may be eligible for other Monash scholarships, or for supplements for data collection, publications, and conference travel.

FOR FURTHER INFORMATION:

See *monash.edu/it/our-research/graduate-research* or email Prof. Phil Cohen (with "PhD Student Application" in header) at: *philip.cohen@monash.edu*.

To be competitive for a scholarship, applicants should have first-class honors (H1), or the equivalent grade of 80% or above. Research experience and publications also are considered.

MONASH UNIVERSITY

Monash University is Australia's largest university, a Group of Eight university, and ranks in the top 60 universities worldwide, with Computer and Information Systems rated in the top 70 (QS World University rankings 2018). In addition to growing rapidly in human-centered computing, software, and cyber-security, it includes data science and machine learning, artificial intelligence and robotics, computational biology, social computing, creative technologies and digital humanities, and basic areas of computer science.

MELBOURNE AREA

Melbourne recently has been rated the #1 city worldwide for quality of life (see Economist & Guardian, *economist. com/blogs/graphicdetail/2016/08/daily-chart-14* and *theguardian.com/australia-news/2016/aug/18/ melbourne-wins-worlds-most-liveable-city-award-sixth-year-in-a-row*), with excellent education, healthcare, infrastructure, low crime, and exceptional cuisine, cultural activities, and creative design. The regional area is renowned for its dramatic coastline, extensive parks, exotic wildlife, and Yarra Valley wine region.

AFFILIATED FACULTY:

Prof. Phil Cohen (Director), Monash Univ. – AI (NLP, Dialogue, Multiagent Systems), Multimodal Interaction

Prof. Wray Buntine, Centre for Data Science, Monash Univ., AI, Bayesian inference, neural networks, text mining

Prof. Lawrence Cavedon, Associate Dean, Computer Science and IT, Royal Melbourne Inst. of Tech. – NLP, Dialogue

Prof. Elizabeth Croft, Dean, School of Engineering, Monash Univ. – Human-Robot Interaction, Collaborative Robotics

Prof. Tom Drummond, School of Engineering, Monash Univ. – Computer Vision, Human-Robot Interaction

Prof. John Grundy, Sr. Deputy Dean, FIT, Monash, Univ. – Software Engineering, Digital Health

Prof. Reza Haffari, Centre for Data Science, Monash University – Natural Language Processing, Deep Learning

Prof. Mark Johnson, Centre for Language Technology, Dept. of Computing Science, Macquarie Univ. – Natural Language Processing, Deep Learning, Linguistics, Cognitive Science

Prof. Ann Nicholson, Monash University – AI, Bayesian Networks, Plan Recognition, Probabilistic Reasoning

Prof. Sharon Oviatt, Director, Monash Univ. HCI Program – Human-Centred Mobile and Multimodal Interfaces

Dr. Cecile Paris, Acting Chief Scientist, Data61 – NLP, HCI, CSCW, User Modeling

Prof. Adrian Pearce, School of Computing and Info. Systems, Univ. of Melbourne – Planning, Multi-agent systems

Prof. Sebastian Sardina, Computer Science and IT, RMIT – Planning, Reasoning about Action, Machine Learning, BDI

Prof. Geoff Webb, Director, Monash Univ. Centre for Data Science -- Machine Learning, Data Science, User Modeling

Prof. Jon Whittle, Dean, Faculty of Information Technology, Monash Univ. – HCI, Software Engineering, Ethics

Prof. Ingrid Zukerman, Centre for Data Science, Monash University –NLP, Plan Recognition, User Modeling, ML