Dr Rajith Vidanaarachchi

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EDUCATION

2017 – 2021 **PhD in Engineering and Computer Science**

The Australian National University

Pattern Recognition for Complex Heterogeneous Time-Series Data: An Analysis of Microbial Community Dynamics

Primary Supervisor: Professor Saman Halgamuge

2011 – 2016 **BSc Engineering (Honours) in Computer Science and Engineering**

University of Moratuwa, Sri Lanka

GPA 4.0 | 1^{st} class | Dean's List in All Semesters

EXPERIENCE

2022 – present **Research Fellow Level B.1**

The University of Melbourne

I jointly work at the Faculty of Architecture, Building, and Planning (ABP) and the Faculty of Engineering and Information Technology (FEIT). At ABP, I am part of the Transport, Health, and Urban Design (THUD) Research Lab, where I research Agent-Based Modelling for socio-spatial simulations. At FEIT, I am part of the Optimisation and Pattern Recognition Research Group, where I do research in complex data analysis as well as teach Machine Learning, and Algorithms and Data Structures.

2021 – 2022 **Senior Technical Officer**

The University of New England (Seconded at The University of Melbourne)

I work at the University of Melbourne's Transport, Health and Urban Design (THUD) Research Lab as a Research Fellow. My research primarily include agent based modelling of social dynamics. I contribute to the Victorian response to covid-19 pandemic through modelling. Other contributions and interests include the effect of electric vehicles and autonomous vehicles on social-economic dynamics.

2021 – 2022 **Casual Sessional Academic | Head Tutor**

The University of Melbourne

- MCEN90048 Artificial Intelligence for Mechatronics (2021 Sem 1, 2022 Sem 1): I was responsible for coordinating other tutors, delivery of tutorials and labs, planning and marking assignments, setting up quizzes, online learner engagement (COVID-19 measures), setting exam questions and marking.
- ENGR30004 Numerical Algorithms in Engineering (2021 Sem 2): Ongoing position. Apart from the same responsibilities as above, I also managed the teaching budget of 50,000+ AUD.

2019 – 2021 **Visiting PhD Student**

The University of Melbourne (Optimisation and Pattern Recognition Lab)

I moved to Melbourne to work with my primary PhD advisor. I continued my PhD research, presented my work regularly and assisted in the writing of grant applications (ARP Discovery, Linkage, NHMRC etc.)

2018 – 2019 **Casual Professional | Programmer**

The Australian Natioinal University

I was a data analyst/programmer for the ANU College of Arts and Social Sciences.

2017 – 2018 **Casual Sessional Academic | Tutor**

The Australian Natioinal University

- COMP1600 Foundations of Computing
- ENGN8535 Engineering Data Analytics

2016 **Software Engineer**

PreviewVR (Pvt) Ltd

2016 – 2017 **Google Summer of Code Scholar**
SciRuby Foundation

2015 – 2016 **Visiting Instructor | Tutor**
University of Moratuwa, Sri Lanka
- CS3032 Computer Networks
- CS2952 Communication Skills

2014 – 2017 **Trainer**
Sri Lankan National Informatics Olympiad Team

2014 – 2015 **Software Engineering Intern**
Kartosoft GmbH, Lüneburg, Germany

PUBLICATIONS

Please refer to my Google Scholar profile.

TALKS & PRESENTATIONS

[1] *Fairness in AI for Health* MerCon 2022, Virtual
[2] *AgentsX.jl — An Extended Julia Framework for Exploring Urban and Social Systems* ABMUS 2022, Aukland, New Zealand
[3] *Imagery, Privacy and Ethics: An Overview of Partially Occluded Facial Biometric Analysis in the Era of Face Masks* ICECET 2021, Virtual
[4] *From The International Space Station To Tropical Rainforests And Polar Ice Caps: Microbial Communities Foretell The Effects Of Climate Change* ICIAfS 2021, Virtual
[5] *DynMIN: Temporally Dynamic Microbial Interaction Network Inference.* RECOMB 2020, Virtual
[6] *Exploring the Dynamics of Microbial Interactions.* Lorne Genome 2020. Lorne, Australia
[7] *Data-driven Insights for Complex Biological Systems.* 2019. IESL, Colombo, Sri Lanka
[8] *Exploring Computational Inference of Microbial Interactions and their Dynamics.* ICIIS '19, Peradeniya, Sri Lanka
[9] *IMPARO: inferring microbial interactions through parameter optimisation.* InCoB '19, Jakarta, Indonesia

ACADEMIC EXPERIENCE

Teaching Experience

The University of Melbourne

- ENGR30004 Numerical Algorithms in Engineering (2021 S2)
- MCEN90048 Artificial Intelligence for Mechatronics (2021 S1, 2022 S1)

The Australian National University

- ENGN8535 Engineering Data Analytics (2018 S1)
- COMP1600 Foundations of Computing (2017 S2)

The University of Moratuwa

- CS3032 Computer Networks (2015-2016)
- CS2952 Communication Skills (2015-2016)

Supervision

- Branislava Godic (PhD), The University of Melbourne
- Afira Faleel (Honours), The Royal College of Surgeons Ireland

Training & Qualifications

- Associate Fellow of the Higher Education Academy (2020)
- ANU Ally Training (2020)
- Principles of Tutoring and Demonstrating (2017)

Reviewing

- BMC Bioinformatics
- Proceedings of the National Academy of Sciences (PNAS) (Assisted)
- Moratuwa Engineering Research Conference (MERCon)
- Agent Based Modelling of Urban Systems (ABMUS)

Conference Activities

- Workshop Organiser - Fair and Explainable AI in Biology and Medicine (MerCon) 2022
- Session Chair - Agent Based Modelling of Urban Systems (ABMUS) 2022

AWARDS

Grants

- The University of Melbourne Faculty of Engineering and IT Indigenous Research Grant 2022 (As Lead CI)
- The University of Melbourne, Learning and Teaching Initiatives Grant 2022
- Google AI Tensorflow Faculty Award - "Fairness in AI" 2021

Scholarships

- ANU International PhD Scholarship (2017)
- Higher Degree Research Merit Scholarship (2017)
- Mahapola Higher Education (Merit) Scholarship (2011)

Competitions & Other

- Dean's List of Faculty of Engineering, University of Moratuwa (All Academic Semesters 2011 - 2016)
- Winner at Spiralation Hackathon, World Conference of Youth (2014)
- IEEEXtreme within top 100 teams (2011 - 2014)

Sri Lankan National Science Olympiads (2007-2011)

- Informatics: 2 Bronze, 2 Silver
- Mathamatics: 1 Bronze, 1 Silver
- Physics: 1 Gold

REFEREES

Available Upon Request