

Hasra Dodampegama

Edinburgh
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EDUCATION

- 2024 - Present **University of Edinburgh**
PhD candidate in IPAB: Institute of Perception, Action and Behaviour
- 2021 - 2023 **University of Birmingham**
PhD candidate in Intelligent Robotics Lab
- 2014 - 2017 **University of Peradeniya**
Bachelor of the Science of Engineering, First Class Honors

RESEARCH EXPERIENCE

- 2021 -Present **'Knowledge-based Reasoning and Learning Architecture for Ad Hoc Teamwork', School of Informatics**
Supervised by Dr. Mohan Sridharan
- Developed KAT, a hybrid architecture for ad hoc teamwork that performs non-monotonic logical reasoning with prior commonsense domain knowledge and models that are learned and revised rapidly from limited examples to predict the behavior of other agents.
 - Enabled the agent to incrementally learn and revise previously unknown axioms that govern the domain dynamics and provide on-demand relational descriptions of its own and other agents decisions as explanations in response to different types of questions.
 - Demonstrated that the architecture outperforms purely knowledge-driven baseline, comparable with or better than a state-of-the-art data-driven baselines, particularly in the presence of limited training data, partial observability, and changes in team composition.
- 2017 **'Location Based Services over Software Defined Networks', Faculty of Engineering**
Supervised by Dr. Suneth Namal
- Design and implement a system that uses software-defined networking to offer location-based services to users.
 - SDNs are used to identify the location of the user and then provide them with useful services such as nearby restaurants, traffic updates or weather forecasts.
- 2016 **'Remote Farm Controlling System', Faculty of Engineering**
Supervised by Prof. Roshan G. Ragel
- Design and implement a gaming system that lets the player experience real farming by linking them to a real farm and a robot.
 - The robot can perform basic faming activities such as ground making, planting and watering. The player can control the robot by looking through the video feedback received to their PC.
 - Presented at Imagine Cup 2016 Sri Lanka.

INDUSTRIAL EXPERIENCE

November 2017
July 2021

Software Engineer, IFS R&D International (Pvt) Limited

- Research and Development Software Engineering.
- Develop, test and maintain Manufacturing functionalities in IFS Enterprise Resource Planning (ERP) system.
- Specialized in Shop Order, Shop Floor Reporting, Manufacturing Visual Planning and Defense Management.

October 2016
March 2017

Software Engineer Trainee, IFS R&D International (Pvt) Limited

- Develop IFS WebLogic Server Admin Console using Angular JS, Java Script, HTML5 and CSS.

PUBLICATIONS

Journals

- Knowledge-based Reasoning and Learning under Partial Observability in Ad Hoc Teamwork. In Theory and Practice of Logic Programming, 2023. ([Link](#))

Conferences

- Knowledge-based Reasoning and Learning under Partial Observability in Ad Hoc Teamwork. In the International Conference on Logic Programming (ICLP), London, UK, July 9-15, 2023. ([Link](#))
- Back to the Future: Toward a Hybrid Architecture for Ad Hoc Teamwork. In the AAAI Conference on Artificial Intelligence (AAAI), Washington DC, USA, February 7-14, 2023. ([Link](#))

Symposium
and Workshops

- Explanation and Knowledge Acquisition in Ad Hoc Teamwork. In the International Symposium on Practical Aspects of Declarative Languages (PADL) at POPL, London, UK, January 15-16, 2024. ([Link](#))
- Collaborate and Explain on the Fly: Nonmonotonic Logical Reasoning and Incremental Learning for Ad Hoc Teamwork. In the international Workshop on Nonmonotonic Reasoning (NMR), September 2-4, 2023, Rhodes, Greece. ([Link](#))
- Toward a Hybrid Architecture for Ad Hoc Teamwork. In the Workshop on Safe and Trustworthy AI (STAI 23) at ICLP, London, UK, July 9, 2023. ([Link](#))
- Coordination in Ad Hoc Teams using Knowledge-based Reasoning and Learning. In the Workshop on Coordination, Organizations, Institutions, Norms and Ethics for Governance of Multi-Agent Systems (COINE) at AAMAS, London, UK, May 29, 2023. ([Link](#))
- Toward a Reasoning and Learning Architecture for Ad hoc Teamwork. In the AAAI Fall Symposium Series Workshop on AI for HRI (AI-HRI), Arlington, USA, November 17-19, 2022. ([Link](#))

Posters

- Hybrid AI Framework for Ad Hoc Teamwork in Robotics. In the International Robotic Showcase, UK-RAS Network, Bristol, July 14, 2023.

Videos

- Knowledge-based Reasoning and Learning in Ad Hoc Teamwork stand-alone video presentation. In the IEEE International Conference on Robotics and Automation (ICRA), Japan, May 13-17, 2024.

PROGRAMMING SKILLS

- Proficient in programming with Python, C, Java, HTTP, PHP, Java Script, MATLAB, ARM, MySQL, Oracle.
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ADDITIONAL EXPERIENCE

- Teaching Assistant for Intelligent robotics module at the University of Birmingham under Prof. Mohan Sridharan. October - December 2023.
- Organizing committee of Workshop on Ad Hoc Teamwork (WHAT) at AAAI, Canada, February 20-27, 2024.
- Editor of Inventor's Club 2015, Faculty of Engineering, University of Peradeniya.
- Participated in Coding competition ACES Coders v5.0.
- Participated in ACES Hackathon 2015 (Developing a Mobile application to measure heartbeat).
- Participated in ACES Hackathon 2016 (Developing a Facebook app to greet people automatically on their special occasions).

REFERENCES

- **Prof. Mohan Sridharan**
Chair in Robot Systems,
School of Informatics,
University of Edinburgh,
Edinburgh, UK
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 - **Prof. Roshan G. Ragel,**
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