Brahma S. Pavse

CONTACT INFORMATION

Email: pavse@wisc.edu
Webpage: `brahmasp.github.io`
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EDUCATION

University of Wisconsin - Madison (Spring 2022 -)

- Ph.D. in Computer Science.
- Interests: Reinforcement learning, representation learning, continual learning, off-policy evaluation.
- Advisor: Josiah P. Hanna.

The University of Texas at Austin (2015 - 2020)

- M.S. in Computer Science.
- Thesis: Reducing Sampling Error in Batch Temporal Difference Learning.
- Committee: Peter Stone (advisor), Scott Niekum.

- B.S. in Computer Science.
- Thesis: Reinforced Inverse Dynamics Modeling for Learning from a Single Observed Demonstration.
- Committee: Peter Stone (advisor), Scott Niekum, Robert van de Geijn.
- Honors and Special Departmental Honors for Research.

PUBLICATIONS (*= CONTRIBUTION)

Journal Articles

1. **Brahma S. Pavse***, Faraz Torabi*, Josiah P. Hanna, Garrett Warnell, Peter Stone. RIDM: Reinforced Inverse Dynamics Modeling for Learning From a Single Observed Demonstration. IEEE Robotics and Automation Letters, July 2020. **2nd place in the RoboCup 3D Sim Scientific Challenge 2019**.

Peer-reviewed Conference Papers

3. **Brahma S. Pavse** and Josiah P. Hanna. Scaling Marginalized Importance Sampling to High-Dimensional State-Spaces via State Abstraction. Association for the Advancement of Artificial Intelligence (AAAI), February 2023. **Selected for oral presentation**.
2. **Brahma S. Pavse***, Faraz Torabi*, Josiah P. Hanna, Garrett Warnell, Peter Stone. RIDM: Reinforced Inverse Dynamics Modeling for Learning From a Single Observed Demonstration. IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), October 2020. **2nd place in the RoboCup 3D Sim Scientific Challenge 2019**.
1. **Brahma S. Pavse**, Ishan Durugkar, Josiah P. Hanna, and Peter Stone. Reducing Sampling Error in Batch Temporal Difference Learning. International Conference on Machine Learning (ICML), July 2020.

Peer-reviewed Workshop Papers

2. **Brahma S. Pavse** and Josiah P. Hanna. Scaling Marginalized Importance Sampling to High-Dimensional State-Spaces via State Abstraction. Workshop on Offline Reinforcement Learning, Neural Information Processing Systems (NeurIPS), December 2022.

1. **Brahma S. Pavse**, Josiah P. Hanna, Ishan Durugkar, and Peter Stone. On Sampling Error in Batch Action-Value Prediction Algorithms. Workshop on Offline Reinforcement Learning, Neural Information Processing Systems (NeurIPS), December 2020.

Book Chapters

2. Patrick MacAlpine, Faraz Torabi, **Brahma Pavse**, and Peter Stone. UT Austin Villa: RoboCup 2019 3D Simulation League Competition and Technical Challenge Champions. In RoboCup 2019: Robot World Cup XXIII, Lecture Notes in Artificial Intelligence, Springer, 2019.

1. Patrick MacAlpine, Faraz Torabi, **Brahma Pavse**, John Sigmon, and Peter Stone. UT Austin Villa: RoboCup 2018 3D Simulation League Champions. In RoboCup 2018: Robot Soccer World Cup XXII, Lecture Notes in Artificial Intelligence, Springer, 2019.

Professional Experience

Sony AI America, Remote, USA
AI Research Intern — Reinforcement learning team — **May 2023 -**

UW-Madison, Madison, WI, USA
Graduate RA — Reinforcement learning — **Jan. 2022 -**
- Leveraging concepts from state abstraction and representation learning to build data-efficient off-policy evaluation estimators.

Salesforce.com, San Francisco, CA, USA
Software Engineer — Database Optimization team — **Aug. 2020 - Jan. 2022**

UT Austin and Bosch, Austin, TX, USA
Autonomous Driving Research Scientist Assistant — **Summer 2020**

Salesforce.com, San Francisco, CA, USA
Software Engineering Intern — Database Optimization team — **Summer 2019, 2018, 2017**

SAS Institute, Cary, NC, USA
Software Engineering Intern — Data Management team — **Summer 2016**

Teaching Experience

University of Texas at Austin, Austin, TX, USA
Teaching Assistant — Data Structures — Rating: 4.5/5.0 — **Fall 2016**

Awards and Honors

- AAAI Student Scholarship (2023).
- UW Madison CS Summer Research Fellowship Award (2022).
- UW Madison CS Graduate Scholarship (2022).
- UT Austin University Honors (2020).
- UT Austin CS Special Departmental Honors (Research) (2020).
- Bosch + UT Austin Summer Research Funding (2020).
- Eva Stevenson Woods Endowed Presidential Scholarship (2019).
- National Instruments Endowed Scholarship (2019).
- RoboCup 3D Simulation League World Champions (2019).
- RoboCup 3D Simulation Technical Challenge World Champions (2019).
- RoboCup 3D Simulation League World Champions (2018).

- RoboCup 3D Simulation Technical Challenge 3rd Place (2018).
- RoboCup 3D Simulation Asia Pacific Champions (2018).
- UT Austin College Scholar (2015-2019).

Service

- Graduate Student Mentor, Wisconsin Science and Computing Emerging Research Stars (WISCERS) (2022).
- Reviewer, UT Austin Computer Science Dept. MS Admissions Committee 2020.

Reviewing

- Neural Information Processing Systems (NeurIPS) 2023.
- International Conference on Machine Learning (ICML) 2023.
- Association for the Advancement of Artificial Intelligence (AAAI) 2023.
- Neural Information Processing Systems (NeurIPS) 2022.
- International Conference on Learning Representations (ICLR) 2022.
- International Conference on Robotics and Automation (ICRA) 2021.

Mentoring

UW Madison Undergraduates

- Adhit Sankaran (2022 - 2023).

Relevant Coursework

UW Madison Graduate

- Real Analysis - I (Jordan Ellenberg)
- Mathematical Foundations of Machine Learning (Robert Nowak)

UT Austin Graduate

- Reinforcement Learning: Theory and Practice (Peter Stone and Scott Niekum)
- Autonomous Robots (Peter Stone)
- Machine Learning (Dana Ballard)
- Geometric Foundations of Data Sciences (Chandrajit Bajaj)

UT Austin Undergraduate

- Honors Artificial Intelligence (Peter Stone)
- Computer Vision/Machine Learning (Kristen Grauman)
- Honors Data Mining (Adam Klivans)
- Stochastic Processes (Stephen Walker)

Personal Details

- Citizenship: USA