John D. Martin

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Education

2015 – 2021 🔖 **Ph.D. Mechanical Engineering** Stevens Institute of Technology.
Advisor: *Brendan Englot*
Thesis: *Reinforcement Learning Algorithms for Representing and Managing Uncertainty in Robotics.*

2013 – 2015 🔖 **M.Sc. Computer Science (Incomplete)** Columbia University.

2009 – 2012 🔖 **B.S. Physics & Aerospace Engineering** University of Maryland.

Publications

Conference Papers

1. **J. D. Martin**, M. Bowling, D. Abel, and W. Dabney, "Settling the Reward Hypothesis," in *International Conference on Machine Learning*, PMLR, 2023.

2. R. Rafailov, K. B. Hatch, V. Kolev, **J. D. Martin**, M. Phielipp, and C. Finn, "Moto: Offline pre-training to online fine-tuning for model-based robot learning," in *7th Annual Conference on Robot Learning*, 2023.

3. F. Chen, **J. D. Martin**, Y. Huang, J. Wang, and B. Englot, "Autonomous exploration under uncertainty via deep reinforcement learning on graphs," in *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, IEEE, 2020, pp. 6140–6147.

4. **J. D. Martin**, K. Doherty, C. Cyr, B. Englot, and J. Leonard, "Variational filtering with copula models for slam," in *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, IEEE, 2020, pp. 5066–5073.

5. **J. D. Martin**, M. Lyskawinski, X. Li, and B. Englot, "Stochastically dominant distributional reinforcement learning," in *International Conference on Machine Learning*, PMLR, 2020, pp. 6745–6754.

6. J. McConnell, **J. D. Martin**, and B. Englot, "Fusing concurrent orthogonal wide-aperture sonar images for dense underwater 3d reconstruction," in *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, IEEE, 2020, pp. 1653–1660.

7. **J. D. Martin**, J. Wang, and B. Englot, "Sparse gaussian process temporal difference learning for marine robot navigation," in *Conference on Robot Learning*, PMLR, 2018, pp. 179–189.

8. **J. D. Martin** and B. Englot, "Extending model-based policy gradients for robots in heteroscedastic environments," in *Conference on Robot Learning*, PMLR, 2017, pp. 438–447.

Articles

1. **J. D. Martin**, B. Burega, L. Kapeluck, and M. Bowling, "Meta-gradient search control: A general method for improving the efficiency of dyna-style planning," *Under Review at The Reinforcemet Learning Conference*, 2024.

2. B. Burega, **J. D. Martin**, and M. Bowling, "Learning to prioritize planning updates in model-based reinforcement learning," *NeurIPS Workshop on Meta Learning*, 2022.

3. **J. D. Martin**, "Time to take embodiment seriously," *RLDM RL as Agency Workshop (Oral)*, 2022.

4. **J. D. Martin**, P. Szenher, X. Lin, and B. Englot, "The stochastic road network environment for robust reinforcement learning," *ICRA Workshop on Releasing Robots into the Wild*, 2022.

5. E. Saleh, **J. D. Martin**, A. Koop, A. Pourzarabi, and M. Bowling, "Should models be accurate?" *arXiv preprint arXiv:2205.10736*, 2022.

6. **J. D. Martin** and J. Modayil, "Adapting the function approximation architecture in online reinforcement learning," *arXiv preprint arXiv:2106.09776*, 2021.

7. W. Fedus, D. Ghosh, **J. D. Martin**, M. G. Bellemare, Y. Bengio, and H. Larochelle, "On catastrophic interference in atari 2600 games," *arXiv preprint arXiv:2002.12499*, 2020.

Employment History

2023 – ····		**Adjunct Professor,** University of Alberta, Department of Computing Science.
2022 – ····		**Research Scientist,** Intel Labs.
2021 – 2022		**Postdoctoral Fellow,** University of Alberta, Department of Computing Science. Advisor: *Michael Bowling*
Summer 2020		**Research Scientist Intern,** DeepMind. Advisor: *Joseph Modayil*
2019 – 2020		**Student Researcher / Research Scientist Intern,** Google AI. Advisor: *Marc G. Bellemare*
2017 – 2019		**Engineering Consultant,** Piasecki Aircraft.
2012 – 2015		**Robotics and Flight Controls Engineer,** Sikorsky Aircraft.

Invited Talks

2023		**The Issaquah Plan**. Seattle Minds and Machines Meetup, Google DeepMind Seattle.
2022		**Learning to Prioritize Planning Updates in Model-based Reinforcement Learning**. University of Massachusetts, Amherst
2021		**Adapting the Function Approximation Architecture in Online Reinforcement Learning**. Google AI, Sparsity Reading Group
2020		**Uncertainty, Perception, and Their Lessons for Creating General-purpose Robots**. University of California, Berkeley
2019		**From Tasks to Timescales: A path to generalization in reinforcement learning**. Massachusetts Institute of Technology DeepMind, Edmonton Google Robotics, New York
2014		**Sikorsky R& D: Motion Planning for Autonomous Rotorcraft**. Stevens Institute of Technology

Academic Service

Masters Thesis Advising

2024 – ···		**Deepak Ranganatha Sastry Mamillapalli**, University of Alberta, co-advised with Matt Taylor.
2023 – ···		**Luke Kapeluck**, University of Alberta, co-advised with Michael Bowling.
2022 – 2023		**Bradley Burega**, University of Alberta, co-advised with Michael Bowling.
2021 – 2024		**Fatima Davelouis**, University of Alberta, co-advised with Michael Bowling.

Organizer

2024		**Finding the Frame Workshop**: An RLC workshop for examining conceptual frameworks in RL.
2023 – ···		**Seattle Minds and Machines Meetup**: a seminar series for Reinforcement Learning in Computer Science and Computational Neuroscience researchers in the Seattle-area.

Workflow Chair

2022		**AAAI**.

Program Chair

2023		**Barbados RL Workshop**.

Academic Service (continued)

2021	🔖 **NAAMII Winter AI School**.
2020	🔖 **ICML Reinforcment Learning Social**.

Program Committee

2023	🔖 **Nature Machine Intelligence**.
	🔖 **TMLR**.
2021	🔖 **ICLR**.
2020–2022	🔖 **NeurIPS**.
2020–2024	🔖 **ICML**.
2019	🔖 **AAAI**.
	🔖 **CoRL**.
2020	🔖 **WAFR**.
2019	🔖 **RAL**.
2018–2020	🔖 **ICRA**.
2017	🔖 **IROS**.
2020	🔖 **JOE**.

Mentor

2022	🔖 **Neuromatch Academy**.
2020	🔖 **NeurIPS New in ML Workshop**.

Teaching Experience

Primary Instructor

Winter 2021	🔖 **Reinforcement Learning Lecture Series,** Nepal Applied Mathematics and Informatics Institute.

Guest Lecturer

2017, 2020, 2021	🔖 **Advanced Robotics,** Stevens Institute of Technology.

Skills

Languages	🔖 English, Nepalese.
Coding	🔖 Python, C, C++, R, LaTeX, OCaml, …
Libraries	🔖 JAX, Haiku, Tensorflow, Pandas, NumPy, …

Miscellaneous Experience

Awards and Achievements

2019 – 2020	🔖 **Robert Brooks Stanley Doctoral Fellow**, Two-time recipient.
2015	🔖 **Department of Homeland Security Doctoral Fellow**.
	🔖 **Howard Hughes Award**, American Helicopter Society.

References

Available on Request