

John D. Martin

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🌐 [jdmartin86.github.io](https://github.com/jdmartin86)

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. Koley, **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 method for improving the efficiency of dyna-style planning,” *arXiv preprint arXiv:2406.19561*, 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 Reinforcement 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