

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

Articles

- 1 **J. D. Martin**, B. Burega, and M. Bowling, “Meta gradient search control: Learning where to plan with imperfect models,” *Under Review*, 2023.
- 2 R. Rafailov, K. H. Beltran, **J. D. Martin**, M. Phielipp, and C. Finn, “Moto: Offline to online fine-tuning for model-based reinforcement learning,” *Under Review*, 2023.
- 3 B. Burega, **J. D. Martin**, and M. Bowling, “Learning to prioritize planning updates in model-based reinforcement learning,” *NeurIPS Workshop on Meta Learning*, 2022.
- 4 **J. D. Martin**, “Time to take embodiment seriously,” *RLDM RL as Agency Workshop (Oral)*, 2022.
- 5 **J. D. Martin**, M. Bowling, D. Abel, and W. Dabney, “Settling the Reward Hypothesis,” *arXiv preprint arXiv:2212.10420 (To appear at ICML 2023)*, 2022.
- 6 **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.
- 7 E. Saleh, **J. D. Martin**, A. Koop, A. Pourzarabi, and M. Bowling, “Should models be accurate?” *arXiv preprint arXiv:2205.10736*, 2022.
- 8 **J. D. Martin** and J. Modayil, “Adapting the function approximation architecture in online reinforcement learning,” *arXiv preprint arXiv:2106.09776*, 2021.
- 9 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.

Conference Papers

- 1 F. Chen, **J. D. Martin**, Y. Huang, J. Wang, and B. Englot, “Autonomous exploration under uncertainty via deep reinforcement learning on graphs,” in *2020 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, IEEE, pp. 6140–6147.
- 2 **J. D. Martin**, K. Doherty, C. Cyr, B. Englot, and J. Leonard, “Variational filtering with copula models for slam,” in *2020 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, IEEE, pp. 5066–5073.
- 3 J. McConnell, **J. D. Martin**, and B. Englot, “Fusing concurrent orthogonal wide-aperture sonar images for dense underwater 3d reconstruction,” in *2020 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, IEEE, pp. 1653–1660.
- 4 **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.
- 5 **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.
- 6 **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.

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.

Teaching Experience






Primary Instructor

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

Guest Lecturer




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

Invited Talks

- 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



- 2023 –  **Luke Kapeluck**, University of Alberta, co-advise with Michael Bowling.
- 2022 –  **Bradley Burega**, University of Alberta, co-advise with Michael Bowling.
- 2021 –  **Fatima Davelouis**, University of Alberta, co-advise with Michael Bowling.

Workflow Chair












- 2022  **AAAI.**

Academic Service (continued)

Program Chair

- 2023  Barbados RL Workshop.
- 2021  NAAMII Winter AI School.
- 2020  ICML Reinforcement Learning Social.




Program Committee

- 2023  TMLR.
- 2021  ICLR.
- 2020–2022  NeurIPS.
- 2020–2023  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.

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