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

Articles

1. B. Burega, **J. D. Martin**, and M. Bowling, "Learning to prioritize planning updates in model-based reinforcement learning," *NeurIPS Workshop on Meta Learning*, 2022.
2. **J. D. Martin**, "Time to take embodiment seriously," *RLDM RL as Agency Workshop (Oral)*, 2022.
3. **J. D. Martin**, M. Bowling, D. Abel, and W. Dabney, "Settling the reward hypothesis," *arXiv preprint arXiv:2212.10420*, 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.

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

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 Tecnhology.

2020 **Advanced Robotics,** Stevens Institute of Tecnhology.

2017 **Advanced Robotics,** Stevens Institute of Tecnhology.

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

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**.

Program Chair

2021 **NAAMII Winter AI School**.

Academic Service (continued)

2020 **ICML Reinforcment Learning Social**.

Program Committee

2021 **ICLR**.
2020–2022 **NeurIPS**.
2020–2021 **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