Patrick Naughton

UIUC Computer Science Ph.D. Student

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Education

| **08/20-08/25** | **University of Illinois at Urbana-Champaign** | **Champaign, IL** |

Ph.D. in Computer Science
Advisor: Kris Hauser
Thesis: Learning-Based Shared Control for Open World, Dexterous Robot Teleoperation

| **08/17-05/20** | **Washington University in St. Louis** | **St. Louis, MO** |

B.S. Electrical Engineering, Second Major in Computer Science
GPA: 4.0/4.0

Journal and Conference Publications

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1. **P. Naughton,** J. Cui, K. Patel, and S. Iba, "ResPilot: Teleoperated Finger Gaiting via Gaussian Process Residual Learning," in 8th Annual Conference on Robot Learning, 2024.

2. **P. Naughton***, J. S. Nam*, A. Stratton, and K. Hauser, "Integrating Open-World Shared Control in Immersive Avatars," in 2024 IEEE International Conference on Robotics and Automation (ICRA), Yokohama, Japan: IEEE, May 2024, pp. 17807–17813. doi: 10.1109/ICRA57147.2024.10611618.

3. **P. Naughton***, J.M.C. Marques*, JC. Peng*, Y. Zhu*, J.S. Nam, Q. Kong, X. Zhang, A. Penmetcha, R. Ji, N. Fu, V. Ravibaskar, R. Yan, N. Malhotra, and K. Hauser, "Immersive Commodity Telepresence with the TRINA Robot Avatar," in the International Journal of Social Robotics, Special Issue on Robot Avatars for Telepresence and Social Interaction, January 2024, doi: 10.1007/s12369-023-01090-1.

4. K. Hauser, E. Watson, J. Bae, J. Bankston, S. Behnke, B. Borgia, M.G. Catalano, S. Dafarra, J.B.F. van Erp, T. Ferris, J. Fishel, G. Hoffman, S. Ivaldi, F. Kanehiro, A. Kheddar, G. Lannuzel, J.F. Morie, **P. Naughton**, S. Nguyen, P. Oh, T. Padir, J. Pippine, J. Park, D. Pucci, J. Vaz, P. Whitney, P. Wu, and D. Locke, "Analysis and Perspectives on the ANA Avatar XPRIZE Competition," in the International Journal of Social Robotics, Special Issue on Robot Avatars for Telepresence and Social Interaction, January 2024, https://doi.org/10.1007/s12369-023-01095-w.

5. **P. Naughton** and K. Hauser, "Structured Action Prediction for Teleoperation in Open Worlds," IEEE Robot. Autom. Lett., vol. 7, no. 2, pp. 3099–3105, Apr. 2022, doi: 10.1109/LRA.2022.3145953.

Refereed Workshop Publications

1. **P. Naughton**, J.S. Nam, J.M.C. Marques, JC. Peng, Y. Zhu, Q. Kong, and K. Hauser, "Pan-Tilt-Roll Televisualization With Adjustable Baseline Stereo," in ICRA 2023, 2nd Workshop Toward Robot Avatars, June 2023.
2. J.M.C. Marques, JC. Peng, **P. Naughton**, Y. Zhu, J.S. Nam, and K. Hauser, "Commodity Telepresence with Team AVATRINA's Nursebot in the ANA Avatar XPRIZE Finals," in ICRA 2023, 2nd Workshop Toward Robot Avatars, June 2023.
3. **P. Naughton***, J.M.C. Marques*, Y. Zhu*, N. Malhotra, and K. Hauser, "Commodity Telepresence with the AvaTRINA Nursebot in the ANA Avatar XPRIZE Semifinals," in RSS 2022, Toward Robot Avatars: Perspectives on the ANA Avatar XPRIZE Competition, July 2022.
4. A. Boloor, T. Wu, **P. Naughton**, A. Chakrabarti, X. Zhang, Y. Vorobeychik, "Can Optical Trojans Assist Adversarial Perturbations?" in ICCV 2021, Workshop on Adversarial Robustness in the Real World, October 2021.

Honors and Awards

- ANA Avatar XPrize Finals, 4th Place, Team AVATRINA, 2022
- ANA Avatar XPrize Semifinals, 6th Place, Team AVATRINA, 2021
- Chirag Foundation Graduate Fellowship in Computer Science, 2021
- NSF GRFP Honorable Mention, 2020
- Washington University in St. Louis McKelvey School of Engineering Valedictorian, 2020

Talks and Demos

1. **Demo**, *Learning a Dexterous Hand Retargeter From Human Manipulation Data.* IMMERSE Symposium, UIUC, April 29, 2025.
2. **Invited Talk**, *Learning Effective Mappings for Teleoperated Manipulation.* UIUC Robotics Seminar, February 14, 2025.
3. **Invited Talk**, *Learning Effective Mappings for Teleoperated Manipulation.* NASA Ames Intelligent Robotics Group, Virtual, October 21, 2024.
4. **Demo**, *Integrating Open-World Shared Control in Immersive Avatars.* IMMERSE Symposium, UIUC, February 7, 2024.

5. *Learning to Fail: Failure Plans and Predictions for Crowd Navigation.* Robotics Institute Summer Scholar Symposium Poster Session. Carnegie Mellon University, Robotics Institute. August 15, 2019.
6. *Underground Robotics: Autonomous Navigation.* UROP Symposium Poster Session. RWTH Aachen University. July 18, 2018.

Positions Held

09/25-	Research Scientist. Apple Inc.
08/20-08/25	Research Assistant. Computer Science Department, University of Illinois at Urbana-Champaign.
02/24-06/24	Research Intern. Honda Research Institute, San Jose CA.
01/23-05/23	Teaching Assistant, Numerical Analysis (CS450). Computer Science Department, University of Illinois at Urbana-Champaign.
05/20-08/20	Research Assistant. Electrical and Systems Engineering Department, Washington University in St. Louis.
08/19-05/20	Introductory Circuits Teaching Assistant. Electrical and Systems Engineering Department, Washington University in St. Louis.
08/18-05/20	IEEE Student Chapter President. Washington University in St. Louis.
09/17-09/19	Student Web Developer. Washington University in St. Louis.
06/19-08/19	Robotics Institute Summer Scholar. Robotics Institute, Carnegie Mellon University.
05/18-07/18	RWTH UROP Research Assistant. Institute for Advanced Mining Technologies, RWTH Aachen University.
01/18-05/18	Undergraduate Research Assistant. Electrical and Systems Engineering Department, Washington University in St. Louis.
01/18-05/18	Engineering Intern. Dynamic Surgical, St. Louis, MO.

Mentorship

- Hyoungju Lim (UIUC Physics BS)
- Andrew Stratton (UIUC CS BS). Now at University of Michigan
- Vignesh Ravibaskar (UIUC CS BS). Now at UChicago
- Jing-Chen Peng (UIUC ME/CS BS). Now at Georgia Tech

Service

- Reviewer for:

- Conference on Robot Learning (CoRL), 2025
- International Conference on Robotics and Automation (ICRA), 2025
- Springer Nature: Virtual Reality, 2025
- International Conference on Intelligent Robots and Systems (IROS), 2025
- Robotics: Science and Systems (RSS), 2025
- Transactions on Human-Robot Interaction, 2024
- Robotics and Automation Letters (RAL), 2024
- Robotics: Science and Systems (RSS), 2022