

Arthur Jakobsson

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EDUCATION

- Carnegie Mellon University** ^{3.8/4} QPA | *Pittsburgh, PA* Expected Graduation May 2027
- Masters of Science in Robotics. Advisor: [Jeffrey Ichnowski](#)
- Carnegie Mellon University** ^{3.7/4} QPA | *Pittsburgh, PA* May 2025
- Stats & Machine Learning w/ minor in Computer Science; University Honors & School of Computer Science Honors

RESEARCH AND WORK EXPERIENCE

- Research Intern, DENSO Pittsburgh Innovation Lab** May 2026 – Aug 2026
- Designed and built RareOcc, a controllable 4D occupancy and LiDAR generator that synthesises sensor data for long-tail and crash-grounded driving scenes. Oral at ECCV '26 SDAD Workshop; extending towards CVPR '27.
- Momentum Lab, CMU ML & Visual Manipulation Research** | [Jeffrey Ichnowski](#) Aug 2024 – Present
- Developing visual and sensing learning methods for active sensing in dynamic and dexterous manipulation; awarded SCS Honors for this work. Building mobile-manipulator teleoperation infrastructure with a Meta robotics researcher. Research in collaboration with CMU's BIG Lab ([Jean Oh](#)).
- Course Instructor - Principles of Imperative Computation (15-122)** May 2025 – Aug 2025
- Sole instructor and lecturer for a 120-student course after three years as TA and Head TA. Founded and led the extra-instruction bootcamp programme, reaching over 2000 cumulative attendees.
- Search-based Pathplanning Lab, CMU ML Research** | [Maxim Likhachev](#) Mar 2023 – May 2025
- Designed heuristic-search methods that make learned multi-agent pathfinding policies collision-free and sharply raise success rates, then showed a simple imitation-learning policy built on them outperforms large-scale learned baselines. Two co-first-author papers, presented at ICAPS '24 and ICRA '25.

PAPERS (FOR FULL LIST PLEASE SEE MY [GOOGLE SCHOLAR](#))

- Wiggle and Go! System Identification for Zero-Shot Dynamic Rope Manipulation** [↗](#)
- [A. Jakobsson](#), [A. Mahajan](#), [K. Pullalarevu](#), [K. Suresh](#), [Y. Yao](#), [Y. Mao](#), [B. Duisterhof](#), [S. Syed](#), [J. Ichnowski](#). In submission
- Work Smarter Not Harder: Simple Imitation Learning with CS-PIBT Outperforms Large Scale Imitation Learning for MAPF** [↗](#)
- [A. Jakobsson*](#), [R. Veerapaneni*](#), [K. Ren](#), [S. Kim](#), [J. Li](#), & [M. Likhachev](#). ICRA '25. **equal contribution*
- Improving Learnt Local MAPF Policies with Heuristic Search** [↗](#)
- [A. Jakobsson*](#), [R. Veerapaneni*](#), [Q. Wang*](#), [K. Ren*](#), [J. Li](#), & [M. Likhachev](#). ICAPS '24. **equal contribution*
- RareOcc: Controllable 4D Occupancy and LiDAR Generation for Long-Tail Driving Scenes**
- [A. Jakobsson](#), [Y.-R. Tuan](#), [L. Julian](#), [S. Hunt](#), [K. Suzuki](#), [S. Tanaka](#), [M. Bandegi](#), [J. Gloomis](#), [H. Fujiyoshi](#), [K. Kitani](#), [J. Ichnowski](#). ECCV '26 SDAD Workshop (Oral)
- Intercepting the Future: Latent-Space Predictive World Model for Dynamic VLA Manipulation** [↗](#)
- [S. Syed](#), [A. Jakobsson*](#), [H. Hao*](#), [J. Ichnowski](#). In submission. **equal contribution*
- ExpReS-VLA: Specializing Vision-Language-Action Models Through Experience Replay and Retrieval** [↗](#)
- [S. Syed*](#), [Y. Ahuja*](#), [A. Jakobsson](#), [J. Ichnowski](#). ICRA '26. **equal contribution*
- Web2Grasp: Learning Functional Grasps from Web Images of Hand-Object Interactions** [↗](#)
- [H. Chen](#), [Y. Yao](#), [Y. Ye](#), [Z. Xu](#), [H. Bharadhwaj](#), [J. Wang](#), [A. Jakobsson](#), [R. Zhao](#), [S. Tulsiani](#), [Z. Erickson](#), [J. Ichnowski](#). IROS '26

SKILLS/INTERESTS/AWARDS

Programming: C, PyTorch, Python, R (+ggplot), C++, Java, Javascript, NodeJS. **ML:** GNNs, CNNs, Diffusion, GANs, RL, image segmentation, one/few-shot learning

Interests: Photography ([my photos](#)), Biking, Badminton

Awards: Dean's List High Honors (Spring 2022, Fall 2023, Spring 2024), Dean's List (Fall 2022, Fall 2023); 1st Place Coolest Graphs, CMU Statistics Dept. ([Manhattan - A Look into NYC's Rats](#))

Grants: NSF Discover ACCESS Grant (750k computation credits), IEEE RAS Travel Grant '25 (~\$1.4k), Dietrich Parent Fund '24 (~\$1.9k), Dietrich Parent Fund '25 (~\$400)