

Arthur Jakobsson

ajakobss@cmu.edu | 650-963-6808 | [LinkedIn: arthurjakobsson](#) | arthurjakobsson.com

EDUCATION

- Carnegie Mellon University** ^{3.65/4} QPA | *Pittsburgh, PA* Expected Graduation May 2025
- Major in Statistics & Machine Learning w/ minor in Computer Science (Bachelor of Science)
 - Selected Coursework: Computer Vision (PhD level), Visual Learning and Recognition (PhD level), Deep Learning (Masters level), Parallel & Sequential Algorithms, Computer Systems, Functional Programming, Cognitive Robotics, Probability and Statistical Inference, Statistical Graphics and Visualization
- The Harker School** | *San Jose, California* Aug 2017 – May 2021

RESEARCH AND WORK EXPERIENCE

- Search-based Pathplanning Lab, CMU ML Research** | *Maxim Likhachev* Mar 2023 – Present
- Engineered postprocessing method using existing heuristic search algorithms to significantly boost ML multi-agent pathfinding success rates. Presented oral paper at ICAPS 2024.
 - Using machine learning to generate better and faster results for multi-agent pathfinding (e.g. applicable for pathfinding for robots in warehouses or self-driving cars). Paper in submission for ICRA 2025.
- Momentum Lab, CMU ML & Visual Manipulation Research** | *Jeffrey Ichnowski* Aug 2024 – Present
- Pursuing project of my own invention advised by Professor Ichnowski. Studying dexterous manipulation of textile with visual input for complex tasks such as table flattening and folding.
- Biorobotics Lab, CMU Computer Vision Research** | *Howie Choset* Oct 2023 – Present
- Developing methods in computer vision and machine learning to analyze and detect anomalies in few-shot scenarios. Focus on GANs, and diffusion for image segmentation and anomaly detection. Working for ARPA-E Mapping project ([Hackster article](#)) for robot gas pipe mapping and repair.
- Principles of Imperative Computation (15-122)** | *Teaching Assistant* Aug 2022 – May 2024
- TA & Head TA ('23) - Pioneered and led development of extra instruction bootcamps for over 1000 cumulative attendants. Developing course infrastructure, managing students and course staff, leading two labs (~40 students)
- NYU's Center for Cybersecurity Research Scholar** | *Nasir Memon* June 2020 – Mar 2024
- Developed a CAPTCHA-like technology for identifying and detecting voice deepfakes using GANs with (among other packages) nnabla, librosa on an HPC.

PUBLISHED PROJECTS

- Improving Learnt Local MAPF Policies with Heuristic Search** June 2023 – Mar 2024
- *R. Veerapaneni**, *Q. Wang**, *K. Ren**, **A. Jakobsson***, *J. Li*, & *M. Likhachev*. (2024). [ICAPS 2024](#). **co-first*
- Work Smarter Not Harder: Simple Imitation Learning with CS-PIBT** Mar 2024 – Aug 2024
- Outperforms Large Scale Imitation Learning for MAPF**
- *R. Veerapaneni**, **A. Jakobsson***, *K. Ren*, *S. Kim*, *J. Li*, & *M. Likhachev*. (2024). [Submitted ICRA '25](#). **co-first*
- AI-assisted Tagging of Deepfake Audio Calls using Challenge-Response** June 2020 – Mar 2024
- *G. Mittal*, **A. Jakobsson**, *K. Marshall*, *C. Hegde*, & *N. Memon*. (2024). [Submitted AsiaCCS '25](#)
- Contact Tracing using Bluetooth: Keeping Privacy while Gaining Freedom** May 2020
- Explained and analyzed Bluetooth Contact Tracing in light of the COVID-19 epidemic. Published in *Awareness Journal of Public Safety Studies in America*, Summer 2020, also available [here](#).
- Tracking Across Physical and Online Domains** | *NodeJS, Firebase, HTML* June 2019 – Aug 2019
- Improve personalization and tracking, for services, especially related to first responder searches. Available [here](#).

SKILLS/INTERESTS/AWARDS

- Programming Experience:** C, PyTorch, Python, R (+ggplot) C++, Java, Javascript, NodeJS
- ML Development Experience:** GNNs, CNNs, Diffusion, GANs, RL, image segmentation, one/few-shot learning
- Languages:** English, Swedish. Elementary: Thai, Japanese, Spanish
- Interests:** Photography ([my photos](#)), Biking, Badminton
- Awards:**
- Dean's List High Honors (Spring 2022, Fall 2023, Spring 2024), Dean's List (Fall 2022)
 - 1st Place Coolest Graphs (CMU Statistics Department for project: *Manrattan - A Look into NYC's Rats*, [link](#)).