Arthur Jakobsson

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Education

Carnegie Mellon University $^{3.52}/_{4}$ QPA | *Pittsburgh, PA* Expected May 2025
- Double major in Statistics & Machine Learning, Computer Science (Bachelor of Science). Intended: Masters in ML
- Selected Coursework: Computer Vision (PhD level), Deep Learning (Masters level), Parallel & Sequential Algorithms, Computer Systems, Functional Programming, Imperative Computation, Probability and Statistical Inference, Statistical Graphics and Visualization, Modern Regression

The Harker School, $^{4.2}/_{4.7}$ GPA | *San Jose, California* Aug 2017 – May 2021

Experience

New York University's Center for Cybersecurity Research Scholar | *Brooklyn, NY* June 2022 – Present
- Developing a CAPTCHA-like technology for identifying voice deepfakes (paper in preparation) using machine learning models using (among other packages) nnabla, librosa on an HPC.

Search-based Pathplanning Lab, CMU Research Intern | *Pittsburgh, PA* Oct 2021 – Present
- Researching usability of Machine Learning to generate better and faster results for multi agent pathfinding (e.g. applicable for finding paths for robots in warehouses or self-driving cars). Paper in progress

Computer Science and Engineering, NYU Research Intern | *Brooklyn, NY* June 2020 – Aug 2020
- Identified manipulated images and false statements made by politicians with Reverse Image Search.
- Drafted candidate algorithm to improve Reverse Image Search, specifically for robustness against manipulations.

Amber Solutions, Inc Intern | *Dublin, CA* June 2019 – Aug 2019
- Leveraged existing router network infrastructure, created method and proof-of-concept to associate user MAC addresses with user contact information and web-browsing cookies to improve personalization
- Co-developed patent for Privacy and the Management of Permissions (patent under application).

Published Projects

Tracking Across Physical and Online Domains | *JavaScript, NodeJS, Firebase, HTML* June 2019 – Aug 2019
- Improve personalization and tracking, for services, especially related to first responder searches. Available here.

Edge and Blur Detection | *Python, OpenCV* May 2018
- Analyzed blur in images and videos for improvement of camera focus systems using OpenCV.
- Partially published on Medium here (over 20k reads).

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 here and on Medium here.

Leadership

Principles of Imperative Computation (15-122) | *Teaching Assistant* Aug 2022 – Present
- TA & Head TA (N23) - Developing course infrastructure, managing students and course staff, leading development of student extra instruction bootcamps, leading two labs (∼40 students) and developing course website

Harker Robotics | *Technical President* Aug 2017 – May 2021
- Worked in mechanical and computer vision teams and wrote proposal to purchase a CNC router and road trailer.
- Competed twice at FRC World Championship in Houston.

HarkerDev | *Member* Apr 2018 – May 2021
- Developed applications that assist students and faculty, such as student payment and class scheduling systems.

Skills/Interests/Awards

Programming Languages: C, Python, R (+ggplot), SQL, C++ Java, Javascript, NodeJS, HTML/CSS

Languages: English, Swedish. Elementary: Thai, Japanese, Spanish

Interests: Photography: iNaturalist profile here, photography Instagram account here, Biking, Badminton

Awards:
- Dean's List High Honors (Spring 2022), Dean's List (Fall 2022)
- 1st Place Coolest Graphs (CMU Statistics Department for project: *Manrattan - A Look into NYC's Rats*, link).