John Alling

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Education

Harvard University, Cambridge, MA May 2021
Candidate for Master of Science in Computational Science & Engineering
Coursework: Artificial Intelligence, Tiny Machine Learning, Scientific Computing, High Performance Computing, Inverse Problems in Engineering

Northeastern University, **Boston, MA** May 2020
Bachelor of Science in Computer Engineering (*Summa Cum Laude)* | Minor in Mathematics
Honors: Tau Beta Pi Engineering Honors Society, Dean's List
Coursework: Simulation, Robotics, Computer Systems, Digital Logic Design, Stochastic Processes, Algorithms, Embedded Design, Circuits and Signals, Probability & Statistics, Differential Equations, Linear Algebra

Air Force Reserve Officer Training Corps, Detachment 355 Boston University, Boston, MA

Technical Skills

Programming Languages:
Python (Tensorflow, PyTorch, Pandas, Scipy), Kotlin, C++, C, MATLAB
Software:
Linux, Git, MS Visual Studio, ROS, LaTeX, Simulink, SolidWorks
Hardware:
NVIDIA Jetson TX2/Nano, Raspberry Pi, Arduino
Certifications (LinkedIn Learning):
Applied Machine Learning: Foundations & Algorithms, AI Foundations: Machine Learning, Learning Docker, Essential SQL Training, Kotlin Essential Training

Work & Research Experience

Air Force Research Laboratory, Rome, NY
Computer Systems Developmental Engineering Officer Summer 2021 – Present
- Explore novel methods of increasing robustness in AI/ML models to adversarial attack
- Implement algorithms on memristor-based hardware for neuromorphic computing

Air Force Institute of Technology, Wright-Patterson Air Force Base, OH
Reinforcement Learning Research Intern Fall 2019
- Leveraged state-of-the-art deep reinforcement learning techniques to train autonomous satellites
- Architected software packages using Docker

Massachusetts Institute of Technology Lincoln Laboratory, Lexington, MA
Advanced Capabilities and Systems Engineering Intern Summer 2019
- Evaluated SIFT-based UAS localization processing chain using CUDA
- Optimized HUD of UAS ground control station using Qt to improve UX

Advanced Capabilities and Systems Technical Assistant Co-op Summer - Fall 2018
- Developed computer vision algorithms for micro-UAV navigation with OpenCV
- Extended detection algorithms to prototype visual servoing guidance
- Integrated developments using Robot Operating System (ROS) middleware

Surveillance Systems Engineering Co-op Summer - Fall 2017
- Analyzed collision avoidance and surveillance algorithm performance of aircraft collision avoidance system
- Upgraded C++ based simulation framework on Lincoln Laboratory supercomputing capability

Oak Ridge National Laboratories, Oak Ridge, TN
Energy Efficiency and Renewable Energy Robotics Intern Summer 2016
- Programmed algorithms utilized by the world's largest 3D printers, translating C++ code into G-code by ORNL Slicer software
- Reduced G-code requirements in print layers by 33% using arc commands