(540) 216-8244
Manassas, VA
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Matthew Trang

Machine Learning Engineer

Portfolio: mattluutrang.github.io
github.com/trangml
linkedin.com/in/matthew-trang

Skills

Languages	Python, C++, Java, Javascript, LaTeX, MATLAB/Simulink
Programming Tools	PyTorch/Tensorflow, RLLib, StableBaselines, OpenCV,
Engineering Tools	Arduino, Raspberry Pi, AutoCAD, ROS, AutoDesk Inventor

Technical Experience

Machine Learning Engineer / Multiple Contracts — **Dec 2019 — Present**
Heron Systems — *Alexandria, VA*

- Train RL agents for government contracts involving transfer learning, trustworthy AI, and complex control
- Research PETS and PPO algorithms for creating low-to-high fidelity transfer learning algorithm
- Code custom neural network modules for validating game balance for DARPA Gamebreaker
- Devise novel reward schemes and neural networks for RL AI Fighter Jet Agents on ACE and ADT contracts

Reinforcement Learning Researcher / ECE Dept — **Dec 2021 — Present**
Virginia Tech — *Blacksburg, VA*

- Research Multi-Agent Generalized Reinforcement Learning for Drones using PyBullet
- Masters work developing simulation environments for drone collaboration and testing RL algorithms using StableBaselines

Graduate Teaching Assistant / ECE 3574 Applied Software Design — **Jan 2022 — May 2022**
Virginia Tech — *Blacksburg, VA*

- Assisted students with class projects and subject matter for two classes with approximately 70 students in total
- Collaborated with Professors and TAs to formulate comprehensive software design curriculum

Senior Design Team Member / PowerHAUS — **Feb 2021 — Dec 2021**
Virginia Tech — *Blacksburg, VA*

- Develop TF2 object detection image classifier for devices in the FutureHAUS, an innovative modular smarthome
- Validate power electronics cartridge consisting of solar panels, charge controllers, inverter, and battery

Embedded UAV Software Engineering SEPP Intern / Software Systems Group — **May 2020 — Aug 2020**
Collins Aerospace — *Sterling, VA*

- Programmed multi-camera visual navigation pipeline for an UAV using MATLAB Simulink and C++
- Collaborated remotely with team of two fellow interns to demonstrate UAV autonomous landing

Design Lead Upperclassman Advisor/ Team Juvo — **May 2020 — Aug 2020**
Virginia Tech — *Blacksburg, VA*

- Designed and built a Wearable Mouse Band to assist a disabled student in utilizing his computer
- Improved computer navigation speeds of the student user by 30

Education

Master of Science in Computer Engineering, *Virginia Tech* — Expected Grad Dec 2022
GPA: 4.00

Bachelor of Science in Machine Learning, Minors in Computer Science, Mathematics, *Virginia Tech* — Dec 2021
GPA: 3.94

Patents

Non-invasive wearable biomechanical and physiology monitor for injury prevention and rehabilitation — US11284838B2
George Mason Research Foundation, Oct 2017

Artificial cognitive declarative-based memory model to dynamically store, retrieve, and recall data derived from aggregate datasets — US20180240015A1
Scriyb LLC, Feb 2017

Activities

IEEExp Virtual Session Presenter, IEEE@VT	Sep 2021
1st Place, DARPA AlphaDogfight Trials, Heron Systems	Aug 2020
1st Place, National SourceAmerica Design Challenge, SourceAmerica	Jun 2019
Pamplin Scholar Award, Virginia Tech, Full-Tuition Scholarship	Mar 2019
Valedictorian, Patriot High School, 4.909/4 GPA	Jun 2018