(540) 216-8244
Manassas, VA
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Matthew Trang

Machine Learning Engineer

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

Skills

Languages	Python, C++, Java, Javascript, MATLAB/Simulink, LaTeX, C, C#
Programming Tools	PyTorch, Tensorflow, Stable Baselines 3, RLLib, OpenCV, Qt, Pandas, Scikit-Learn
Engineering Tools	ROS, Git, Subversion, Docker, Linux, AutoDesk Inventor, Blender, AutoCAD

Technical Experience

Machine Learning Engineer / DARPA ACE, Gamebreaker, etc. **Dec 2019 — Aug 2022**
Heron Systems *Alexandria, VA*

- Trained RL agents, devised novel reward schemes, and implemented state of the art RL algorithms for government defense contracts advancing transfer learning, trustworthy AI, and complex control systems
- Bootstrapped RL Testing Environment for creating low-to-high fidelity generalized transfer learning algorithms to provide five different testing environments with configurable difficulties
- Coded custom neural network modules for validating game balance for DARPA Gamebreaker, generating a 90% accurate win probability classifier for Starcraft II with interactive React JS dashboard

Reinforcement Learning Researcher / M.S. Computer Engineering **Dec 2021 — Present**
Virginia Tech *Blacksburg, VA*

- Research Multi-Agent Generalized RL for Autonomous Systems using PyBullet to simulate collaborative systems
- Develop drone collaboration simulation environments and data processing pipeline for rapidly testing RL algorithms

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

- Collaborate with Professors and TAs to formulate comprehensive software design curriculum and projects for two semesters
- Taught subject matter and assisted students with software projects for two classes with ~70 students in total using C++ and Qt

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

- Designed TF2 object detection image classifier and mobile app for controlling smart devices in a smarthome with limited data
- Validated safety and functionality of power electronics cartridge consisting of high-voltage systems such as a solar panel array, high-voltage battery, and inverter prior to deployment at the Dubai Expo 2022

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

- Programmed multi-camera visual navigation pipeline for a GPS-denied UAV using MATLAB Simulink and C++
- Collaborated remotely with team of two fellow interns to demonstrate vision-based autonomous landing with fiducial markers

Education

Master of Science in Computer Engineering, *Virginia Tech* Expected Grad Dec 2022
GPA: 3.88

Bachelor of Science in Machine Learning, Minors in Computer Science, Mathematics, *Virginia Tech* Dec 2021
GPA: 3.95

Patents

Non-invasive wearable biomechanical and physiology monitor for injury prevention and rehabilitation — US11284838B2
George Mason Research Foundation, Filed Oct 2017, Granted Mar 2022

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

Awards/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