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Matthew Trang

Machine Learning Engineer

Portfolio: mattluutrang.github.io
github.com/trangml
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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 <i>Heron Systems</i>	Dec 2019 — Present <i>Alexandria, VA</i>
<ul style="list-style-type: none">• 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 <i>Virginia Tech</i>	Dec 2021 — Present <i>Blacksburg, VA</i>
<ul style="list-style-type: none">• 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 <i>Virginia Tech</i>	Jan 2022 — May 2022 <i>Blacksburg, VA</i>
<ul style="list-style-type: none">• 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 <i>Virginia Tech</i>	Feb 2021 — Dec 2021 <i>Blacksburg, VA</i>
<ul style="list-style-type: none">• 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 <i>Collins Aerospace</i>	May 2020 — Aug 2020 <i>Sterling, VA</i>
<ul style="list-style-type: none">• 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 <i>Virginia Tech</i>	May 2020 — Aug 2020 <i>Blacksburg, VA</i>
<ul style="list-style-type: none">• 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 GPA: 4.00	Expected Grad Dec 2022
Bachelor of Science in Machine Learning, Minors in Computer Science, Mathematics, Virginia Tech GPA: 3.94	Dec 2021

PATENTS

Non-invasive wearable biomechanical and physiology monitor for injury prevention and rehabilitation — US11284838B2 <i>George Mason Research Foundation, Oct 2017</i>
Artificial cognitive declarative-based memory model to dynamically store, retrieve, and recall data derived from aggregate datasets — US20180240015A1 <i>Scryb LLC, Feb 2017</i>

ACTIVITIES

IEEEExp 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