Matthew Ciolino

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EXPERIENCE

PeopleTec
Machine Learning Engineer *June 2019 – Present*

- Applied state-of-the-art deep learning algorithms to investigate effectiveness in satellite imagery
- Presented to stakeholders and customers on machine learning algorithms and applications
- Developed Super-Resolution framework that increased precision (mAP) for various computer vision tasks by ~15%
- Cleaned helicopter maintenance logs using a bootstrapped hierarchal work unit code classifier to correct over 300k misclassified maintenance events for the 160th Special Operations Aviation Regiment (Airborne)

Papers: Training Set Effect on Super Resolution for Automated Target Recognition (1st – available at SPIE)
Discoverability in Satellite Imagery: A Good Sentence is Worth a Thousand Pictures (3rd – available at arXiv)
Autonomous Global Search to Detect and Monitor Missile Sites (3rd National Fire Control Symposium)

PeopleTec
Junior Engineer (C++ Developer) *Nov 2018 – June 2019*

- Developed fast, physics-based models for predicting damage and response of threat systems due to missile collisions
- Designed, built, and maintained efficient C++ and Fortran code for Parametric Endo/Exothermic Lethality Simulation (PEELS) using version control and coding guidelines to increase model accuracy by 12%
- Performed analysis and data reduction in Python to validate model performance on Linux and Windows

Lehigh University
Research Assistant *Aug 2017 – Dec 2017*

- Modeled and constructed custom 750kV co-axial electric motors and control arms for a thrust vectoring counter-rotating propeller system that could be launched from a 70mm mortar round
- Modified open-source software in C++ to implement a custom control system that allowed servos full manual control
- Tested/Calibrated the electromechanical system on testbench and in flight to document performance characteristics

PROJECTS

Portfolio Site – Matthew Ciolino Portfolio
- HTML, CSS, and Python portfolio site with flask and bootstrap containing demos, notebooks, and project code

Multi-Scale Single Image Super Resolution
- Created variable scale test framework for Single Image Super Resolution for State-of-the-Art Deep Learning networks
- Developed system to chip down a larger image into a variety of patch sizes and patch shapes to run ablation studies

LEADERSHIP

Soterra: Women's Safety XPRIZE
Design Lead *Jan 2017 – May 2018*

- Led design of 1st mesh networking (IOT) commercial electronic device to enter women's safety device industry
- Won $50,000 as a top 5 finalist among industry leaders during the XPRIZE summit in Mumbai, India
- Directed creation of mechanical (SolidWorks) and electrical (PCB) documentation for production of our device
- Programmed peripheral components and sensors (GPS, Button, LED) in C

EDUCATION

Georgia Institute of Technology, *Atlanta, GA*
Master of Science in Computer Science with specialization in Computational Perception & Robotics *May 2022*

Lehigh University, *Bethlehem, PA*
Bachelor of Science in Mechanical Engineering and Minor in Aerospace Engineering *May 2018*

ADDITIONAL SKILLS

Programming: Python**,** Docker, Unix, C++, Git, Windows, AWS, SQL, Azure, HTML, CSS