# Dr. Marco Peterson

## Skills

Project Management, Military Command, Aerospace Engineering, Orbital Dynamics, Computer Science, Linux, PyTorch, Python, C++, PHP, MatLab, Robotic Operating System (ROS), Computer Vision (CV), Machine Learning (ML), Artificial Intelligence (AI), NVidia Jettison/Xavier, Computer Networking, MavLink, Helicopter & Drone Pilot, Commercial Pilot, Aircraft and Flight Crew Scheduling, Aviation Maintenance Operations.

## Education & Certifications

**Virginia Tech** – Blacksburg, VA
   **PhD** – **Aerospace Engineering**

**Virginia State University** – Petersburg, VA
   **Masters of Science** - **Computer Science**

**Virginia State University** – Petersburg, VA
   **Bachelors of Science** – **Computer Science**

➢ **Commercial FAA Pilot Ratings**
   - Rotorcraft – Helicopter (900 Flight Hours)
   - Commercial/Instrument – Helicopter
   - Aircraft Line Rating – BV-234
   - Long Line Helo Fire Fighter
   - Part 107 Drone Pilot's License

| Project Management Professional | Professional Scrum Master | Certified Scrum Master | AGI Satellite Tool Kit Certification |
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➢ **Security Clearance** can be discussed during interview.

## Work Experience

**_Virginia Tech Space Labs_**                                           **_May 2017 – May 2022_**

➢ **Project Management**: Successfully managed deliverables, funding, and manpower of a **14-man technical team** spanning multiple departments including Computer Science, Computer Engineering, Aerospace Engineering, Mechanical Engineering, and Graphical Design to produce a range of robotic machine learning capabilities for both public and private customers totaling **$1.1 million in contracts** ranging from orbital assets to forest fire detection.

- **Robotics Software Design:** Implemented autonomous flight systems and testing protocols using drone platforms and other related robotic applications within Virginia Tech's Space lab for 6 degree of freedom micro gravity flight control simulation using ROS, Python, MavLink, Q ground control, and various other soft wares and libraries. These efforts lead to the delivery of several hardware components for orbital construction methodologies not yet attempted to be used on future space missions, both classified and unclassified, the completion of several peer reviewed publications, and the development of several testing regimes and capabilities

- **Computer Vision & Big Data Engineer:** Implemented YOLOv4, YOLOv5, and other industry leading **Machine Learning(ML)/Computer Vision (CV)** architectures to train, identify, classify, and track objects of interest in the uniquely challenging space domain environment for future in-space assembly and on-orbit servicing autonomous tasking. All training, validation, and testing datasets for this endeavor were built from scratch due to non-existent data with in this research domain.

## Military Experience

### *U.S. Army*                                           *Aug 2010 – Present*

- **Aviation Maintenance Company Commander (Captain)**: Company Commander responsible for maintenance operations of one of the largest aviation battalions in the United States Army, consisting of **14 CH-47F Chinooks, 35 UH-60L/M Blackhawk Aircraft**, and all associated ground support maintenance equipment totaling **$1.2 Billion**. Maintenance operations included production control, quality control, component repair, and safety sections consisting of **205 personnel**.

- **Aviation Platoon Leader (1st Lieutenant)**: Responsible for the training, employment, and performance of 4 combat crews consisting of **24 personnel and 4 CH-47F Chinook Helicopters valued at $30 Million** each forward deployed to Middle Eastern combat environments.

- **CH-47 Chinook Pilot**: Operation of a **$30 million** military aircraft under combat conditions and FAA regulations to provide aviation coordination and multilateral capabilities to ground force commanders and Homeland agencies; accumulating **270 combat flight hours and 900 cumulative flight hours.** The safe and effective deployment of tactical aircraft requires an understanding of complex flight physics, emergency procedures, and flight planning.

- **Aviation Operations Specialist (Enlisted)**: Scheduling and dispatching of tactical aircraft, with in combat environments and national airspace. Duties included real-time aircraft battle tracking, airspace approvals, and maintenance of flight and tactical records.

## Quick Links

Online Resume              Virginia Tech SpaceDrones Body of Work             Research & Publications