

# Andrew Lepetri

Computer Scientist and Mechanical Engineer



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alepetri.github.io

## Professional Experience

### Systems Engineer @ Northrop Grumman

March 2019 - Present // Rancho Bernardo, CA

- ▶ Execute Modeling, Simulation, and Analysis in support of adding future capabilities onto an Unmanned Aircraft System (UAS)
- ▶ Perform Risk Reduction by modeling Sense-And-Avoid functionality onto a UAS, flying the emulated UAS in various airspace environments to collect and analyze critical safety metrics, characterizing the benefits and challenges potential additions would have on the system
- ▶ Practice requirement generation from industry standards
- ▶ Integrate physical LRUs into a Hardware in the Loop (HWIL) simulation
- ▶ Create Command and Control Graphical User Interfaces in C#
- ▶ Emulate hardware interfaces in C++: encoding, piping, and handling messages between subsystems
- ▶ Develop a Data Analysis framework in Python using Django, Postgres, and Docker with real-time simulation monitoring capabilities
- ▶ Execute trade studies using Monte Carlo runs to generate statistics to aid decision making
- ▶ Work with an Agile team of engineers to develop and improve software using Git configuration control
- ▶ Create process automation tools in python to increase operational efficiency

### Vision Engineer @ Cohu Inc

March 2017 - May 2018 // Poway, CA

- ▶ Contributed within a cross-disciplinary team to research, design, develop, test, and present vision related solutions in processing and sorting thousands of microchips per hour
- ▶ Worked on an array of projects including camera and lighting assemblies, micron precision alignment, device shuttle trays, OCR and 2DID recognition, and vision software applications

### Instructional Assistant @ San Diego State University

August 2016 - December 2017 // San Diego, CA

- ▶ Taught and tutored for SDSU's MATLAB Computer Applications course
- ▶ Developed mathematics based assignments to be solved in MATLAB
- ▶ Honed teaching abilities through delivering weekly recitations sessions to students
- ▶ Unpacked complex engineering and programming topics into understandable lessons

### Biomechanical Researcher @ San Diego State University

January 2016 - April 2016 // San Diego, CA

- ▶ Performed fiber-based cell migration simulations in MATLAB
- ▶ Modeled key mechanical properties of cells, analyzing their chosen paths through a randomly generated Extracellular Matrix
- ▶ Sourced simulation parameters from scientific journals

## Skills

### Programming Languages

Python, C++, C#, SQL, JavaScript, MATLAB, Java, HTML and CSS

### Technical Tools

Visual Studio, CMake, Git, Docker, Django, Jira, Confluence, Node.js, OpenCV

## Education

### Georgia Institute of Technology

2021 - Current // Atlanta, GA

(Online Program, 4.0 GPA)

Pursuing a Master of Science in Computer Science with a specialization in Computational Perception and Robotics.

*Expected graduation: Spring 2023*

### San Diego State University

2014 - 2018 // San Diego, CA

(3.54 GPA)

Bachelor of Science in Mechanical Engineering with a Minor in Computer Science

- ▶ Awarded Dean's List Honors (2014-2018)

## Projects

### NGC Von Kármán Competition (2020)

- ▶ Executed 3D target tracking using sensor fusion of camera and thermal data to update the positional belief within an Extended Kalman Filter.

### SDSU Mechatronics // (2015-2018)

- ▶ Project manager for a team of Mechanical Engineers researching and designing an Autonomous Underwater Vehicle to compete in the AUVSI Robo Sub competition.
- ▶ Developed leadership and interpersonal skills through a simulated work environment.

### SDSU IEEE's Aztec Air // (2016-2017)

- ▶ Leader of a team of Electrical and Computer Engineers in constructing and programming a Semi-Autonomous Aerial Vehicle that utilizes inflight sensory interpolation to adjust flight path.

## Interests

Chess, Bird Watching, Hiking, Traveling, 3D Printing, Tinkering