Hunter Kuperman, in short…

- Georgia Tech CS/Math double-major
    - Junior; 4.0 GPA

- Conducting Control Theory research with the Autonomous Decision and Control Systems Laboratory *(MATLAB)*

- Founded, Captained, Led Software Team for three-time-state-champion FIRST Robotics Team *(Java)*
    - Dean's List Finalist
    - Individually, spoke on panel at World Championship

- Wrote lung segmentation algorithm for chest X-rays with 97.6% accuracy *(MATLAB)*

- Taught AP Physics class in high school after teacher quit mid-year
    - First time in school history all students passed the AP Physics exam

(a more detailed, traditional resume follows on the back)

Hunter Kuperman

CS Researcher, Eagle Scout, FIRST Dean's List Finalist, and Lover of All Things Coding
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Education

Georgia Institute of Technology - Atlanta, GA **Expected May 2025**

- Bachelor of Science, Computer Science and Mathematics double major. Faculty Honors. 4.0 GPA.
- Coursework: Data Structures and Algorithms, Linear Algebra, Computer Organization (*in progress*)

Coastal Carolina University - Myrtle Beach, SC **January 2019 - May 2022**

- Dual Enrollment with high school. 15 courses (48 credit-hours). 4.0 GPA
- Coursework: Image Processing and Analysis in MATLAB, Algorithmic Design I & II, Relational Databases

Skills

- Java, Python, C, MATLAB, SQL, Object Oriented Programming, Android Studio, Git
- Data Structures and Algorithms, Control Theory, Image Processing, UML, and a drive to learn more!

Technical Experience and Projects

Undergraduate Researcher - Autonomous Decision and Control Systems Lab **October 2022 - Present**

- Rederived and implemented seminal control theory algorithms (LQR, ILQR, MPC) in **MATLAB** for literature review
- Working towards developing a novel algorithm that enables autonomous agents to efficiently navigate multi-agent interaction using principles from control and game theory

Competitor - Georgia Tech Competitive Programming Team **October 2022 - Present**

- Attacking theory-based data structures and algorithms problems in **Java** and **Python**
- Currently preparing for the upcoming ICPC regional competition

Individual Project - Lung Segmentation Algorithm **April 2022 - May 2022**

- Developed a novel, multi-step algorithm for identifying lung tissue from chest X-rays using **MATLAB**
- Combined traditional image processing and analysis techniques including laplacian filtering, morphological operations, and adaptive contouring to achieve 97.6% accuracy (94.6% F1) on a set of 30 test X-rays

Founder; Captain; Software Lead - The Penguineers (FIRST Tech Challenge) **August 2016 - May 2022**

- Qualified for the FIRST World Championship 3 times, twice under my captainship
- Served as Software Lead for 6 years; self-taught **Java** from no knowledge to implementing multi-class systems, developing a calculus-based odometry library, and training basic neural networks
- Built consistent, sensor-driven, top-scoring autonomous code to win the State Championship Control Award
- Taught 10+ team members how to program and created 6 Java tutorial videos on YouTube (https://bit.ly/ftc-vids)

Volunteer Work

Physics Teacher - Scholars Academy High School **January 2022 - May 2022**

- Taught new content and prepared students for the AP Physics 1 exam after teacher quit mid-year
- As their main resource, led entire 11-student AP Physics class to pass the exam for the first time in school history

Event Coordinator - South Carolina FIRST Lego League **July 2020 - February 2021**

- Youngest event coordinator in the state; managed 12 teams and trained/communicated with volunteers
- Kept the fun, nerdy FIRST spirit alive in a remote environment through new initiatives such as Zoom pits