SUTTON YAZZOLINO

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EDUCATION

Stanford University, B.S. Electrical Engineering   June 2025
ROTC National Scholarship Recipient
Relevant Coursework: Digital System Design; Power Electronics; Board Level Design, Signals and Systems; Circuit Analysis I & II; Probability for Computer Scientists; Control Systems; Embedded Systems; Programming Abstractions; Virtual Reality; Introduction to Cryptography; Imaging Sensors; Linear Algebra & Multivariable Calculus; Differential Equations with Linear Algebra & Fourier Methods

TECHNICAL SKILLS

- **Languages & Frameworks:** C, C++, Python, MATLAB, Verilog/VHDL, Flask, HTML/CSS/JS
- **Platforms & Systems:** Embedded Linux, RTOS, ARM Cortex, FPGA, PCB Design
- **Protocols & Tools:** TCP/UDP, I²C/SPI, Git, Oscilloscopes, Network Analyzers

RELEVANT EXPERIENCE

U.S. Army Research Laboratory — Researcher   June 2024 – Aug 2024
- Conducted confidential research in dynamic military networks, focusing on point-to-point latency.
- Developed simulations to model and optimize military communication protocols under adversarial conditions.
- Implemented real-time network monitoring tools (0.01 ms–10 s range) using TCP/UDP protocols for awareness.
- Utilized MATLAB and C for low-level signal processing and latency monitoring strategies.

ROTC — Cadet Executive Officer (XO)   Sept 2023 – June 2025
- Led training and logistics for our battalion (60+ people), improving coordination and physical preparedness.

UPS —Manager   Oct 2020 – May 2021
- Supervised a team of 15 employees, trained employees, optimized workflow, and coordinated operations.

Adaptive Lab — Researcher   June 2019 – Aug 2019
- Conducted biomimicry research, analyzing structural efficiencies through data collection and statistical analysis.

PROJECTS

Digital Audio System(2023)
- Designed a multi-feature digital audio synthesizer in Verilog on FPGA.
- Implemented chord synthesis, ADSR modulation, echo effects, and waveform visualization.

Class D Audio Amplifier & Speaker System (2023)
- Built and optimized a Class D amplifier, focusing on signal fidelity and harmonic distortion.
- Used oscilloscopes and network analyzers for debugging and performance tuning.

Wearable Pulse PPG Sensor(2024)
- Developed a biometric sensor PCB with Wi-Fi communication for real-time data display.
- Integrated I²C/SPI protocols for efficient sensor interfacing.

Network Latency Monitoring Web App (2024)
- Developed a Flask-based web app to monitor real-time network latency in military systems.
- Frontend with HTML/CSS/JS; backend TCP/UDP data handling in C; analyzed fiber-optic transmission.

Autonomous Robot (2025)
- Wrote master–slave Arduino C/C++ firmware with custom serial protocol for autonomous navigation.
- Designed sensor fusion (ultrasonic, IR, IMU), motor drivers, and power circuits for competition.

Dual-Wavelength UART over Fiber Optic (2025)
- Achieved full-duplex UART on a single fiber by modulating blue/IR LEDs, decoding via custom TIA/comparator.
- Measured BERs (100% blue, 90% IR) and optimized gain/filters for signal integrity.

Machine Learning Optimized Flight Pathing(2025)
- Built a Python simulator using Monte Carlo sampling and Bayesian updating for eVTOL risk assessment.

INTERESTS & ACTIVITIES

- **Academic Year Resident Advisor (RA)** – 2022-2025; **Ranger Challenge Team** – member 2021-2024, Vice-Captain 2023, Team Captain 2024; **Army Air Assault School** – Summer 2022; **Summer Resident Advisor (RA)** –Summer 2023; **Cadet Advanced Camp** – Summer 2024; **Stanford Varsity Lacrosse** – Starting Goalie, 2021-25
- **Awards** – Army National Merit Scholar(2022); Joe Dox Annual Excellence Award (2022); ROTC Merit Award (2022, 2025); Superior Cadet Award (2024,2025)

Relevant Coursework Options:

Digital System Design; Power Electronics; Board Level Design, Signals and Systems; Circuit
  Analysis I & II; Probability for Computer Scientists; Control Systems; Embedded Systems; Programming Abstractions;
  Virtual Reality; Introduction to Cryptography; Imaging Sensors; Linear Algebra & Multivariable Calculus; Differential
  Equations with Linear Algebra & Fourier Methods

Electrical Engineering & Systems
EE 100 – The Electrical Engineering Profession
ENGR 40M – An Intro to Making: What Is EE?
EE 108 – Digital System Design
EE 42 – Introduction to Electromagnetics and Its Applications
EE 101A / 101B – Circuits I & II
EE 102A – Signals and Systems I
EE 118 – Introduction to Mechatronics
EE 134 – Introduction to Photonics
EE 119 – 3D+ Imaging Sensors
EE 153 – Power Electronics
EE 156 – Board Level Design
EE 267 – Virtual Reality

Computer Science & Algorithms

CS 106B – Programming Abstractions
CS 103 – Mathematical Foundations of Computing
CS 109 – Introduction to Probability for Computer Scientists
CS 255 – Introduction to Cryptography

Mathematics & Analysis
MATH 51 – Linear Algebra & Multivariable Calculus
MATH 53 – Differential Equations with Linear Algebra & Fourier Methods

Energy & Applied Physics (optional / role-dependent)
CEE 107A – Understand Energy
EE 65 – Modern Physics for Engineers