JUSTIN [YUHANG] SUN

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Aspiring, Dedicated, Motivated, Perseverant
I have a strong passion for optimal control design with AI and am eager to enhance and innovate across various fields.

EDUCATION

SANTA CLARA UNIVERSITY | Bachelor of Science **Santa Clara, CA**
Electrical Engineering & Engineering Physics & Math & Computer Sci *Expected June 2024*

- Relevant Courses: Machine Learning, Analog Circuit Design, Numerical Analysis, Control System, Intro to Robotics, Statistics, Power Electronics, ODE | Planned to take: Deep Learning, Optimization, PDE.
- Tau Beta Pi, IEEE executive board, ACM, AIAA
- Engineering Dean's List, Dean's Scholarship
- Gap Year 2020-2021
- GPA: 3.827/4.0

EXPERIENCE

Student Office Assistant | SCU School of Engineering *Sep. 2023 - Present*
- Assist professor with course assignments evaluations and providing feedback
- Courses: Power Electronics

Cyberinfrastructure Technologies Student Assistant | Santa Clara University *Jul. 2022 - Present*
- Manage laboratory computers and related resources and provide technical support to faculty, students, and staff

Undergrad Student Research | Data Analysis and Machine Learning *Jun. 2023 – Dec. 2023*
- Collect and analyze the power outage characteristics and demographic data from the ground up and create illustrations using Python and MATLAB
- Determine outage vulnerability using selected features (principal component analysis)

Undergrad Student Research | Robotics *Apr. 2022 – Jun. 2023*
- Implemented a guided tour with a socially assistive robot (NAO 6) using Python|ROS|C++
- Collaborated in a three-member student team to enhance project specifics
- Published on SCU Scholar Commons: https://scholarcommons.scu.edu/elec_senior/79/

Undergrad Student Research | Ethics *Jun. 2023 – Jun. 2024*
- Examine various ethical issues related to space exploration, including but not limited to satellites & space debris, international relations in space, and ethical use of space resources, etc.
- Markkula Center for Applied Ethics Fellowship

Math Tutor | Santa Clara University Mathematics Learning Center *Sept. 2019 – Jun. 2020*
- Held individual and group study sessions. Courses: calc., diff. eq., linear algebra, etc. (Nominated by a professor)

PROJECTS

Detect Sleep States | Machine Learning | Kaggle Competition *Oct. 2023 – Nov. 2023*
- Analyze accelerometer data for sleep monitoring and enable them to conduct large-scale studies of sleep
- Employ data pre-processing, feature selection, model generation, and teamwork skills

Analog IC Building Block Design | Analog IC Design
- Simulated and analyzed the low-dropout regulator and improved the characteristics using Cadence Virtuoso

Flyback Converter Study (LT3574) | Power Electronics
- Analyzed basic functions, line regulation, load regulation, and efficiency of LT3574 under various scenarios using LTspice

Disk Drive Read System | Control Systems
- Established a closed-loop system based on a disk drive configuration
- Modify, simulate, and analyze the system with various requirements (MATLAB & Simulink)

Custom Speaker PCB Design

- Created a custom PCB with design constraint considerations using EagleCad |Hand soldering and testing

The Smart Beehive | Community-Based Engineering Design | Freshman year

- Designed and built a remotely controlled beehive for a local small business with a team of 3 students
- eFolio: https://sites.google.com/scu.edu/js-engr110/home

SKILLS

Programming: MATLAB, Python, C/C++, HTML/CSS, Assembly

Software: Simulink, Cadence Virtuoso, LTspice, Eagle, Conda, SolidWorks, Microsoft Suite, LaTeX

Equipment: Electrical testing tools, PCB Soldering, 3D Printing, Laser Cutting

Language: English (fluent), Mandarin (fluent), Korean (limited)

SERVICE & OUTREACH

- SCU School of Engineering Mentor (Mentor Collective)
- The Third Street Community Center Science Course Lead
- Wanbang School Sino-American Program Teaching Assistance
- SCU Ignition Center - Immersion Program at Cholula, Mexico

INTERESTS

- Optimal control system design, AI & autonomy, frontier Physics and Mathematics, VR/AR, 3D Modelling
- Astrophotography/photography: https://www.blurb.com/b/10269514-sparks-in-santa-clara-university