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, Control System, Numerical Analysis, Intro to Robotics, Statistics, Power Electronics, Analog Circuit Design, ODE | Planned: Deep Learning, Optimization, PDE, Digital Signal Processing.
- IEEE executive board, SPS, ACM, AIAA
- Gap Year 2020-2021
- GPA: 3.827/4.0

EXPERIENCE

Student Office Assistant | SCU School of Engineering *Sep. 2023 - Present*
- Assist professors 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 in motion control, navigation, and speech recognition.
- 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.
- Granted by the Markkula Center for Applied Ethics Hackworth 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/native), Korean (limited)

SERVICE & INVOLVEMENT

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

Honors & Awards

- Tau Beta Pi
- Dean's List, Santa Clara University School of Engineering
- Dean's Scholarship, Santa Clara University School of Engineering
- Hackworth Fellowship for Applied Ethics, Markkula Center for Applied Ethics

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