

Shengya Zhang

424-398-9506 | gracezha@usc.edu

Education

Tsinghua University

February 2021 - July 2021

USC TOP EE Exchange Program, Electrical Engineering

Coursework: Electromagnetism, Embedded Engineering Practicum

University of Cambridge, Pembroke College

July 2022 - August 2022

Cambridge Summer Program

Coursework: Hardware Neuromorphic Engineering, Neurobiology (Stem Cells)

University of Southern California

Expected Graduation: May 2024

B.S. Electrical and Computer Engineering; B.S. Computational Neuroscience

Cumulative GPA: 3.96/4.0, ECE Major GPA: 3.98/4.0

Honors: Viterbi Grand Challenge Scholar, Ming Hsieh Institute Undergraduate Research Scholar, Tau Beta Pi

Research

Tsinghua University, Digital Television Technology R&D Center

April 2021 - July 2021

- Individual R&D project on air quality monitoring
- Designed PCBs involving various analog sensors; developed code in C

University of Southern California, Hossein Hashemi Group

August 2021 - Present

- R&D of a neural interface to attenuate signal artifact while reading neural signals and sending stimuli
- Designed a six-layer 1.3-by-2.9-in. compact PCB with 200+ components, supporting USB 3.0 communication with the host and a minimum of 5MHz on-board serial communication
- Firmware currently in development

University of Southern California, Valero Lab

February 2022 - February 2023

- R&D of a mixed signal data acquisition hub and motor driver for tendon-driven robotics
- Designed a six-layer 2-by-3.5-in. PCB with 200+ components involving significant mixed signal circuit design, supporting simultaneous acquisition of angular rotation, stretch, and motor driver status over SPI at 2MHz
- Implementation is daisy-chainable, supporting hub-to-hub communication over CAN bus in the kilohertz range

University of Southern California, Hossein Hashemi Group

August 2023 - Present

- Directed research on SRAM-based in-memory computing for machine learning hardware accelerator
- Currently undergoing literature review, simulating and evaluating currently existing SRAM-based in-memory computing structure

Leadership, Activities and Honors

STEM Perspectives, Secretary

August 2023 - Present

- Secretary of STEM Perspectives, a USC student organization for STEM outreach among high schoolers
- Design machine learning and neurobiology curriculum with board members for high school-level learners
- Recruit tutors, schedule class sessions, draft newsletters, and archiving records

Ming Hsieh Institute Undergraduate Research Scholar

August 2023 - Present

- Selected as 1 of 5 undergraduate to receive exclusive funding, leadership, mentorship opportunities
- Organize biweekly events for undergraduate students to get involved in research
- Organize and present at the Viterbi 13th Annual Research Festival

USC Trial Advocacy Program, Captain

August 2019 - May 2023

- Teach new members techniques of litigation; lead teams in nationwide competitions
- Competitive record ranked #1 among ~200 teams on the west coast in 2022 and 2023 season
- Personally received three outstanding witness portrayal award and three outstanding attorney award

Volunteer Tutor Community Program, Manager (Remote)

2014-Present

- Manage community program of 30 students and 10 tutors that provides free weekly English and Math tutoring for underprivileged elementary school students in Shanghai
- Served a total of more than 100 underprivileged students

Skills

Embedded & VLSI Design: KiCAD, Altium, DipTrace, Cadence Virtuoso, LTSpice, Verilog

Coding: C/C++, Python, MATLAB, GitHub, Jupyter

Language: Native English, Native Chinese, Elementary French, Elementary Russian

Miscellaneous: Technical writing, project management, collaboration and communication