Hao Le

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 haole.art

EDUCATION

UNIVERSITY OF CALIFORNIA, SAN DIEGO
2023 - Present

M.S. IN ELECTRICAL ENGINEERING

- Concentration in electronic circuits and systems.

UNIVERSITY OF CALIFORNIA, SAN DIEGO
2018 - 2022

B.S. IN ELECTRICAL ENGINEERING, GRADUATED CUM LAUDE

- Concentrated on machine learning and controls. Minored in studio arts.

EXPERIENCE

QUARTUS ENGINEERING
2021 - 2023

ASSOCIATE ELECTRICAL ENGINEER, INTERN 2021 - EARLY 2023

- Altium PCB ARM-based custom boards running RTOS for motion and environment controls; firmware written in C/C++ to drive ICs via SPI/I2C and communicate with C# server.
- Beckhoff Automation and Click PLC programming for industrial automation.
- FPGA SPI, I2C camera interface high-speed image processing on Xilinx SoC FPGA boards. Written in SystemVerilog in Vivado. Interfaced AXI DMA cores via Vitis bare-metal apps or Petalinux.
- Optomechanical LiDAR systems design and drafting in Solidworks.
- Robotics and motion-planning with MATLAB, CoppeliaSim, and ROS.
- Presented detailed design reviews to customers that included trade studies, BOMs, and schematics.

180NM CMOS OP-AMP DESIGN ECE 164 UCSD
Fall 2022

STUDENT

- Designed two-stage, folded-cascode and common-source, differential-to-single-ended operational amplifier using 180nm CMOS technology constraints. Biased with constant-gm current reference and downstream current mirrors.
- Simulated performance in Cadence Virtuoso, achieving 80dB of gain and 35MHz of bandwidth, on top of stable margins.
- Chosen out of 50 class groups to present for Apple judges; won **2nd place** prize.

VIDEO PROCESSING LAB UCSD
2020 - 2022

STUDENT RESEARCHER

- Co-authored ISOCC 2021 paper *Human-Inspired Camera: A Novel Camera System for Computer Vision*.
- Specializing in a Unity3D synthetic platform for autonomous driving data generation and algorithm benchmarking.
- Produced large, diverse datasets tailored for robust object detection.
- Collaborated with feature-matching researchers by generating synthetic point-cloud data and pose ground truth.

ROBOTICS AND MECHANISMS LABORATORY UCLA
Summer 2017, 2019

INTERNING RESEARCHER

- Worked under a doctoral student to develop a novel compliant robotic actuator design that is compact yet can deliver up to 150 Nm and 15 degrees of deflection
- Designed in Solidworks and manufactured prototype parts using CNC and wire EDM; experimented using system ID, frequency sweep, and LabVIEW data collection.
- Aided in writing and editing paper using LaTex submitted to IROS 2020.
- Prototyped a novel torque coupler design capable of selecting multiple paths of power transmission.

SELF-HOSTED PORTFOLIO WEBSITE

PERSONAL HOBBY

- Self-taught HTML, CSS, PHP, and JavaScript to make from scratch front/backend website to showcase art, music, and engineering body of work.
- Hosted on Dell Poweredge server running Apache virtually inside Proxmox; added Samba and SFTP filesharing capabilities for cloud streaming of media.

SKILLS

PROGRAMMING LANGUAGES	***Experienced:*** Python	C	C# ***Familiar:*** CLI	C++	PHP	HTML & CSS	SystemVerilog
SOFTWARE	Altium	Cadence	Vivado Design Suite	Unity3D	SolidWorks	GIT	LabVIEW	MATLAB	LTSpice
PRACTICAL	PLC programming	Xilinx UltraScale Platform	FDM & SLA 3D printing	Soldering	CNC	Wire EDM