



Hao Le

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EDUCATION

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

Since 2023

ASSOCIATE ELECTRICAL ENGINEER, INTERN 2021 - 2023

- Altium PCB STM32-based custom controls board and cable harness design for field applications; 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.

IEEE PROJECT DRIVE UCSD

Fall 2019 - Spring 2020

PROJECT MECHATRONICS HEAD

- Part of tenth-scale RC car racing competition team responsible for mechanical and embedded systems.
- 3D printed customized mounts for hardware and fabricated chassis out of metal.
- Programmed NVIDIA Jetson running ROS to perform SLAM using RGB-D and LiDAR data.

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

