

ALAN GUO

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EDUCATION

Northwestern University	Evanston, Illinois
• Doctor of Philosophy in Computer Engineering	Jan. 2024 – Present
Northwestern University	Evanston, Illinois
• Master of Science in Electrical Engineering	Sep. 2022 – Dec. 2023
<i>Overall GPA: 3.74/4.0</i>	
University of Shanghai for Science and Technology	Shanghai, China
• Bachelor of Engineering in Electronic Information Engineering	Sep. 2018 – Jun. 2022

EXPERIENCE

ASIC Design Engineer	Jul. 2023 – Present
<i>Fermilab (Fermi National Accelerator Laboratory)</i>	Batavia, Illinois
• Participated in the designs of SPROCKET3 ASIC blocks for Skipper CCDs for detecting electrons of dark matter with Fermilab ASIC Design Groups	
• Responsible for back-end digital flow for Photonic Transmitter block including RTL, simulation, verification, implementing floorplan and P&R	
• Verifying the XPROCKET2 and SPROCKET3 on TSMC 65nm design flow on Xcelium, remediating all errors	
Research Assistant	Apr. 2023 – Present
<i>Northwestern Hardware Systems and Design Automation Lab (Prof. Seda Ogrenci)</i>	Evanston, Illinois
• Using Cadence EDA tools for synthesizing, verifying, floorplanning, and P&R for various blocks and designs	
• Research on memory fault memory designs for neural SRAM network accelerator	
Hardware Test Engineer	Jul. 2021 – Aug. 2021
<i>Shanghai STEP Electric Corporation</i>	Shanghai, China
• Tested various data against the diagrams of circuit boards and provided suggestions for the R&D department	
• Designed schematic diagrams, conducted PCB reviews and component changes, and assisted in handling production and after-sales quality issues for future works	
Software Development	Jul. 2020 – Aug. 2020
<i>COMAC Software Co., Ltd. from Commercial Aircraft Corporation of China</i>	Chengdu, China
• Participated in the development of a company interview system in Java, solved permissions problems, and questioned banks accessing	

RESEARCH

Smart Knob with Haptic Feedback by BLDC Motor Controlled by Web Server	Apr. 2023 – Jun. 2023
• Using embedded C++ to build firmware for ESP32 to control BLDC motor, designing PCB using KiCad	
• Using AWS server for controlling the knob from the cloud, writing webpage	
Webcam Based on Atmel MCU and ESP32 as Wi-Fi with Website Integrated	Jan. 2023 – Mar. 2023
• Used embedded C to build firmware for MCU, designed website for streaming video using Wi-Fi	
• Designed PCB using Eagle, built 3D models for camera case in OnShape, assembled the whole camera	
Manned Beach Car Based on STM32 with Self-designed Drive Board	Mar. 2021 – Jun. 2022
<i>Shanghai University Student Innovation and Entrepreneurship Project, Team Leader</i>	
• Designed and soldered H-bridge PCB circuit, used embedded C in Keil to program the STM32 MCU	
• Combined STM32 with a self-designed DC brush drive board and a high-power motor to assemble the vehicle	

ADDITIONAL

Skills: Embedded C (Microchip Studio, Arduino, Keil), C, C++, Java, Python, MATLAB, LabVIEW, Cadence Tools (Genus, Innovus, Xcelium), RTL, Digital IC Design, Verilog, Tcl, Makefile, PCB Design (Eagle, Fusion 360, KiCad), Web Design (AWS Server, HTML, JavaScript, CSS)

Languages: English, Mandarin, Shanghainese, Japanese

Hobbies: Violin (studied for over 18 years), Badminton (was on USST competition team)