Melissa Chang

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WORK EXPERIENCE

Texas Instruments

Applications (Electrical) Engineer *Sept 2022 - Present*

- Designed and created schematics and PCBs with power circuits, differential communication protocols, audio, and general system integration (I/O, I2C, MDC/MDIO) for boards used for engineering evaluation and demonstrations.
- Conducted signal integrity simulations (IBIS model, S-parameter) to evaluate and enhance board design.
- Review schematics, layouts, and component selection to help meet signal integrity requirements.
- Validated and debugged audio system boards, including hardware bring-up, Linux driver configuration, power-up verification, and signal timing checks; developed and implemented comprehensive test cases.
- Resolved Electromagnetic Interference (EMI) and Compatibility issues with PCBs to ensure compliance with Automotive standards IEC62228-5 and SAEJ2962-3.
- Led technical demonstrations and presented new product features at tech trade shows, showcasing latest advancements.
- Supported new product development through competitor research, chipset feature definition, test board design, and the creation of product briefs, reference designs, datasheets, and application notes.
- Independently drove technical debugs from bring up to design verification.
- Defined project scopes for interns and provided supervision and training, ensuring successful project execution and professional development.
- Wrote scripts in VBA and Python to automate the creation of graphs and reports from sales data, streamlining the analysis of customer base trends and improving reporting efficiency.

Boatrax and Florida International University

Research Intern for Blockchain and IoT *June 2019 - Sept 2019*

- Coded a smart contract in Solidity and Python to develop a decentralized app in Ethereum to process and record boat sensor information from a Raspberry Pi.

RELEVANT SKILLS

- Programming/Embedded Systems: C/C++, Python, Matlab, Linux
- Engineering Software: Cadence Sigrity, Ansys SIWave, Advanced Design System (ADS), Spice, Altium, Visio
- Lab equipment: Time Domain Reflectometer (TDR), VNA, Real-time scope, Logic Analyzer, Multimeter, Solder Iron, Smartbits, ThermoStream (thermal testing)
- Communication Protocols: MDC/MDIO, I2C, SPI, I2S, SGMII/LVDS, SerDes
- Technologies: High Speed Signal Design, Signal Integrity, Time Sensitive Networking, Serial Communication

EDUCATION

Bachelor of Science in **Electrical Engineering**

University of California, Los Angeles, GPA: 3.76/4.0 *June 2022*

PROJECTS

Cooking Papa

Systems Design Course Project *Jan 2022 - June 2022*

- Developed a spin-off of the game *Cooking Papa* in Python, applying concepts of Speech processing, IMU gesture recognition, vision processing, graphics, and MQTT communication in a team of four.
- Coded the IMU gesture recognition feature with 6 degrees of freedom in the Python by collecting and analyzing gyroscope and accelerometer data in real time.

Bruin Supermileage Vehicle

Bruin Supermileage Vehicle Team @ UCLA *March 2021 - Jan 2022*

- Designed a logic circuit in Quartus to control three UCC27712 gate drivers for our brushless DC motor controller in a team of three.
- Simulated the BLDC motor controller logic circuit using ModelSim.