Melissa Chang

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WORK EXPERIENCE

Texas Instruments

Applications (Electrical) Engineer *Sept 2022 - Present*

- Designed and created schematics and PCBs with power distribution circuits, differential communication protocols, audio, and general system integration (I/O, I2C, MDC/MDIO) for boards used for High Speed SerDes and Ethernet evaluation and demonstrations.
- 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.
- Selected components for schematics based on system requirements, cost constraints, and lead time considerations.
- Conducted signal integrity simulations (IBIS model, S-parameter) to evaluate and enhance board design.
- Led technical demonstrations and presented new product features at tech trade shows, showcasing how time synchronization can be used for vehicle applications such as radar and audio.
- Acted as Applications Lead for new product development, including competitor research, chipset feature definition, test board design, and the creation of product briefs, reference designs, datasheets, and application notes.
- Mitigated Automotive customer escalations by independently driving debugs from bring up to design verification.
- Travel to U.S. and Asia to provide onsite customer support to help meet Start of Production deadlines.
- Defined project scopes for interns and provided supervision and training, ensuring successful project execution and professional development.

Product Marketing Engineer Intern *June 2020 – Sept 2021*

- Contributed technical docs, how-to video clips, and sales collateral for Ethernet PHY products.
- 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/Firmware: C/C++, Python, Matlab, Linux
- Circuit Software: Cadence Sigrity, Ansys SIWave, Advanced Design System (ADS), Spice, Quartus Prime, Altium
- 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, Audio Video Bridging, Serial Communication Protocols

EDUCATION

Bachelor of Science in **Electrical Engineering**
GPA: 3.7/4.0
University of California, Los Angeles *June 2022*

EXTRACURRICULARS

Bruin Supermileage Vehicle Team

Powertrain Team *March 2021 - Jan 2022*

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