Christian W. Moser

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Education

Oklahoma State University Aug. 2019 - May 2023
Bachelor's of Science in Electrical and Computer Engineering GPA: 3.6
Minor in Computer Science and Mathematics President's Honor Roll
Recognition and Honors
• Eta Kappa Nu
• The Honors College
• *"People's Choice"* Design Competition Award

Work Experience

Information Technology and Data Acquisition Intern at Boeing May 2022 – Present

• Develop front-end UI components for Jeppesen Map Kit Web using the Angular TypeScript framework
• Manage SQLite databases with the ArcGIS system for accessing geospatial mapping, data analysis, and analytical evaluations within the Java SpringBoot framework and Microsoft Azure platform
• Spearhead time-sensitive tasks within a small team of developers to achieve efficient workflows using the Agile Scrum project management platform Jira

Undergraduate Researcher at Oklahoma State University Jan. 2022 - May 2023

• Perform, develop, and benchmark side-channel attacks using correlative and differential power analysis
• Design machine learning models such as Deep Neural Networks for deployment to edge computing devices for security benchmarks via extraction of sensitive data through side-channel power leakage
• Research, prepare, and deliver weekly presentations to faculty over academic publications of high correlation to ongoing research
• Develop hardware to implement Binary Neural Network onto FPGA with communication protocol based on SPI

Assistant Technician at Kicker Stillwater Designs May 2021 – May 2022

• Test, diagnose, and repair Class AB and D amplifiers, speakers, and various audio electronics, yielding daily between 7 to 14 completely repaired electronic systems
• Operate Audio Precision testing equipment to measure Signal-to-Noise (SNR), frequency filtering through Bode plots, and maximum power output of power electronic systems
• Work closely with schematics to diagnose specific device failures
• Regularly replace both surface-mounted and through-hole soldered devices during repairs
• Overhauled and restructured entirety of department VBA-based Excel sheets to increase productivity and throughput

Supplemental Instruction Leader at Oklahoma State University Feb. 2021 – Jan. 2022

• Engaged students by implementing strategies for group learning to address visual, auditory, and kinesthetic learning styles
• Developed important leadership skills by helping teach material up to five hours a week
• Worked closely with professors and faculty to maximize student engagement

DSDR Student Programmer at Oklahoma State University Feb. 2020 – May 2021

• Worked with version control systems such as GitHub to test and prototype software
• Used multiple programming languages like Python, JavaScript, and Ruby for software design to customize data automation tools to be used by varying departments within the company
• Wrote documentation and software manuals for general user audiences to use specific software solutions

Technical Experience

Programming Languages: C, C++, Python, MATLAB, Java, SystemVerilog, Verilog, C#, JavaScript, TypeScript, Kotlin, SQL, Ruby

Programming Frameworks: SpringBoot, Angular, React, Flask

Design Analysis and Modeling: OrCAD Design Suite, Pathwave Advanced Design System, AutoDesk Inventor, Blender 3D Rendering Software, Intel Quartus Prime, Xilinx Vivado, Xilinx Vitis HLS, ModelSim, Icarus Verilog

Operating Systems: UNIX, Linux, Windows, macOS, Android, iOS

Projects

Machine Learning Edge Deployment for Security Benchmarking Infrastructure Fall 2022 - May 2023

Lead Researcher
• Develop Machine Learning models in SystemVerilog and Verilog for deployment to Field-Programmable Gate Array (FPGA)
• Develop standard communication protocol to interact with FPGA using Python and serial communication from aggressor FPGA for power analysis
• Presented work at multiple research symposiums, faculty discussions, and peer review conversations
• Responsible for on boarding new researchers to grow development team and assigning tasks for organized and efficient development

Be Clean Android Application Baker Hughes' Hack OKState 2022

• Designed and developed a social media application to increase global ecological awareness by using carbon credits to incentivize a global audience to reduce carbon footprint
• Worked within a small interdisciplinary group to research and develop business plan to support application profitability
• Heavily utilized the React framework in TypeScript for UX development

Lake McMurtry Android Application Cowboy Hackathon 2022

• Rapidly developed Android application in less than 48 hours using Android Studio and Kotlin for the State Park of Lake McMurtry
• Worked efficiently in a close team of 4 members to learn, develop, and release an application that targeted all modern Android devices
• Closely communicated with park officials to develop an application to meet the needs of the client

TCP Marketplace Server *CS 4323: Design and Implementation of Operating Systems I*, Fall 2021

• Spearheaded project as lead developer to design marketplace database server that could communicate to multiple servers with varying amount of clients to simultaneously process seller, customer, product, billing, and order information
• Designed project entirely in C programming language to highlight the issues of race conditions in multithreading and multiprocessing software
• Implemented hashmap-based data structure in database to keep a living tree of information that could simultaneously write-out to files while accessing information in O(1) time

Relevant Coursework

Electrical Engineering: Applied Fields & Waves II (Electrostatics II), Digital Signal Processing, AI in Engineering

Computer Engineering: Digital Integrated Circuit Design, Computer Architecture, Embedded Computer Systems

Mathematics: Intermediate Differential Equations, Cryptography, Linear Algebra

Computer Science: Design and Implementation of Operating Systems, Data Structures and Algorithms, Computer Science II

Activities and Involvements

Institute of Electrical and Electronics Engineers Fall 2021 - Present
• Coordinate professional development events to raise awareness for electrical engineering opportunities available to peers in my academia
• Spearhead both hardware- and software-based projects to foster a productive environment and improve quality of life on campus

Association of Computing Machinery Fall 2021 – Present
• Integrate engineering principles and concepts into organization to offer broader perspective of the computer science field as a whole
• Execute outreach events to generate awareness of organization

Theta Tau Professional Engineering Society Fall 2021 – Fall 2022
• Coordinate Brotherhood events to generate a healthy-community environment among other members of the society
• Help organize outreach events and foster professional development among peers

Engineers Without Borders Fall 2019 – Spring 2020
• Participated in community-building activities and volunteering opportunities