AJAYA DAHAL

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EDUCATION

Master of Science	Graduation: December 2023	MSU GPA: 4.0/4.0
Bachelor of Science	Graduation: May 2022	MSU GPA: 4.0/4.0
Major: Electrical and Computer Engineering		
Mississippi State University		Starkville, Mississippi

SIGNIFICANT COURSEWORK

Algorithms, Advanced Circuit III, Advanced Java, Computational Intelligence, Computer Architecture, Data Communication, Data Structures, Digital System Design, Embedded System, Microprocessor, Multisensor Fusion, Operating System, Sensor Processing for AV, Sensor Fusion 2.0 (Camera and Lidar), SDR-based Sensing.

TECHNICAL SKILLS

- **Software:** C/C++, Python, Java, JavaScript, SQL, Android Studio, Backendless, RESTful API, GIMP, Agile Jira
- **Hardware:** Verilog, Petalinux, Yocto, Robot Operating System (ROS); 3D printing; 3D modeling in SOLIDWORKS; embedded system design using Arduino, Raspberry Pi, FPGAs and other MCUs; OrCAD; Altium; Proteus; KiCAD; Quartus Prime; Vivado; LabVIEW; Wireless Insite; PX4; and Renesas's e2 studio.

WORK EXPERIENCE

- **Advanced Micro Devices (AMD) –** San Jose, California   Jan 2023 – Present

Product Application Engineer 2:

Key responsibilities revolve around embedded systems and high-speed Ethernet design from 10Mbps (TEMAC) to 800G (DCMAC). Gaining skills in creating and upgrading innovative example designs, while also troubleshooting and resolving issues related to GTM/GTY/GTH/GTYP. Additionally, maintain comprehensive documentation for product and user guides, specifically for various AMD IPs and evaluation boards including US/+ MPSoC and Versal devices. Expertise extends to troubleshooting high-speed designs with bare-metal, Petalinux, and Yocto OS, ensuring seamless integration and optimal performance. With a track record of delivering exceptional results, dedicated to driving cutting-edge solutions in the field of embedded systems.

- **Hunter Engineering Company—Raymond Electronics Plant,** Raymond, Mississippi   Jan 2020 – Jan 2022

PCB Design Engineer Co-Op:

Design functional test fixtures to test PCBs that are manufactured at the plant. Develop an executable operator-friendly program in LabVIEW that can communicate with microcontrollers. Design circuit boards in KiCAD/Altium and create the test fixtures in such a way that they are Aegis Factory Logix compatible. Created C/C++ code integrated with LabVIEW for a database required by quality control. Designed a station for an operator to detect defects in a PCB using a camera and OpenCV over the summer semester of 2021.

- **Mississippi State University—Electrical and Computer Engineering,** Starkville, Mississippi   Aug 2019 – Dec 2023

(Graduate) Research Assistant

a) Cooperate with researchers in the Center for Advanced Vehicular Systems, CAVS at Mississippi State University, enabling technologies such as LIDAR, radars, and low-cost cameras, as well as powerful graphical processing units (GPUs) and the explosion of deep neural networks (OpenCV, TensorFlow) to detect lanes on different roads. b) Worked on various machine learning and deep learning techniques for sensor fusion for camera and LIDAR mostly using SqueezeSeg and TensorFlow. Work with a team of researchers to develop a cell phone tracking system inside a prison by implementing AI methods to create triangulation to pinpoint the cell phone using machine learning and software-defined radios. c) Worked with a team of researchers from 5 universities and National Instruments in 5G communication research as a Certified Part 107 FAA Drone Pilot. Experimented with srsLTE/RAN, OAI, and Amarisoft technologies to understand and build 5G and beyond networks. d) One of the ten students who were selected for the MSU/USDA Summer Research Experience program. The research mainly involved building a spectrum scanning system using software-defined radios. The raw IQ baseband signals were collected to plot power spectrum density and waterfall chart which are used to train a CNN-based model to detect the presence of signals in a real-time application for microwave remote sensing.

PERSONAL PROJECTS   2018 – Present

- Created an app that keeps track of local videos that are watched completely. The app consumes Google Search API and YouTube API (1 million quotas). Created another app for a real-time temperature monitoring system for old servers using Google Firebase and a real-time database.
- Successfully created a program using Google TensorFlow and its components to detect the Darth Vader character from Star Wars in any given picture.
- Designed, simulated, and fabricated various embedded systems like drones, bench power supply, and tire pressure monitoring systems using microcontrollers and 315 MHz receivers. Conducted several seminars on topics like analog circuit design, Arduino, and Raspberry Pi.

LEADERSHIP EXPERIENCE

• Team Lead	Senior Design Team—Mississippi State University	2022 – 2023
• President	*Nepalese Student Association*—Mississippi State University	2021 – 2022
• Software Lead	*Xipiter Unmanned Aircraft System Integrated Products Team*	2021 – 2023
• Vice President	*Phi Theta Kappa*: *Sigma Tau Chapter*—El Centro College	2017 – 2018

AWARD ACCOMPLISHMENTS

• Recipient of Second Place Senior Capstone Design Award	2022
• Recipient of Certificate of Excellence ECE 3424 Microprocessors at Mississippi State University	2021
• Recipient of funding from Mississippi State University for undergraduate research program for deep learning techniques for autonomous vehicles.	2020 – 2021
• Recipient of a 2020-2021 Mississippi Automotive Manufacturers Association Scholarship.	2020
• Bonus prize winner of NXP HoverGames Challenge 2: Help Drones, Help Others During Pandemics	2020
• First runner-up of robotic competition – Dallas Personal Robotics Group.	2018