Arshpreet (Arsh) Singh

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EDUCATION

Purdue University | Bachelor of Science in Electrical & Computer Engineering Technology — Expected May 2022

- Major GPA: 3.44/4.00.
- Minor in Computer Science.
- Research in Embedded Systems: Autonomous Vehicles and Maze Solving.
- Study Abroad in Japan.
- *Team Leader*, Boiler Gold Rush (New student Orientation Committee), Taiwanese and Japanese Student Associations.

EXPERIENCE

Assistant Project Engineer — Aug 2018 – Present

Purdue University | West Lafayette, IN

- Provided support to Lab Supervisor with 10+ projects created for Embedded & Concurrent Systems Courses utilizing Atmel AVR, Arduino, Altera DE1, C/C++, AHDL, VHDL, Verilog, MATLAB Simulink, LabVIEW, & Multisim.
- Developed Firmware and Embedded Software for Autonomous Vehicles, Line Following Vehicles, Battle Bots, Biopsy Instruments, Stepper Motors & Vehicle Lighting Controls utilizing SPI, I2C, ADC, DAC, GPIO, and PWM protocols in C/C++.
- Designed Firmware to interpret wireless communication methods including IR, Bluetooth, LiDAR & Ultrasonic Sensors in C\C++.
- Utilized Agile (SCRUM) and Git for software development and version control.
- Utilized Frequency Generators, Power Supplies, Digital-Multimeters, Oscilloscopes, and Spectrum Analyzers to analyze, debug and test embedded software.
- Demonstrated equipment handling to 1000+ students and supported students with course projects.

Embedded Software Engineer (Industry Capstone II) — Dec 2019 – May 2020

Honda Manufacturing | Greensburg, IN

- Developed Firmware to interpret Temperature Sensors in the Regenerative Thermal Oxidizer utilizing FreeRTOS.
- Developed automated tests to implement error handling and utilized GNU, Oscilloscopes, and Spectrum Analyzers for debugging.
- Utilized Agile (SCRUM) and Git for software development and version control.

Design Engineer (Industry Capstone I) — Aug 2019 – Dec 2019

Honda Manufacturing | Greensburg, IN

- Analyzed 10 years of heat energy leakage charts of Regenerative Thermal Oxidizer and estimated heat requirements for factory paint department.
- Formulated heat transfer methods with Failure Mode & Effect Analysis (FMEA) and Design Verification Plan & Report (DVP&R).
- Regulated Milestone Assessment and Work Breakdown Structure with Slack and MS Project.

Researcher: Autonomous Vehicles & Maze Solving — Aug 2018 – Dec 2019

Purdue University | West Lafayette, IN

- Assembled Texas Instruments Robotic Systems: Autonomous Vehicle and Maze Solver.
- Developed Embedded Software in Atmel Studio on an MSP 432 microcontroller utilizing USART, I2C, SPI and DC Motors.
- Analyzed, tested, and reported shortest path algorithms including BFS, DFS, Dijkstra and A* utilizing ARM Assembly, and C++.
- Developed 30+ unit and automated tests in Visual Studio Code to implement error handling mechanisms thereby ensuring stability.

Undergraduate Teaching Assistant — Jan 2018 – May 2018

Purdue University | West Lafayette, IN

- Demonstrated lab procedures, equipment operation and programming requirements to students for 15 lab exercises.
- Guided 40 students in AHDL and VHDL technologies with Quartus II and Altera DE1.
- Graded student performance of lab procedures.

Team Leader International: Boiler Gold Rush (New Student Orientation Committee) — Aug 2017 – Sep 2019

Purdue University | West Lafayette, IN

- Held 18 discussions about new student group dynamics developing interpersonal skills.
- Conducted various team building energizers for 400+ new students to strengthen relationships.
- Facilitated a well-planned and effective full campus tour for 50+ new students.

SKILLS

C/C++| Python | Java | Assembly| Linux | FPGA Firmware (AHDL, VHDL and Verilog) | Multisim | LabVIEW

SolidWorks | MATLAB Simulink | ARM | x86 | Atmel AVR | Arduino IDE | Git | Agile (SCRUM) | FMEA | DVP&R