

Jayaram Rajgopal

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Education

Rensselaer Polytechnic Institute – Bachelor's of Science Degree in Electrical and Computer Systems Engineering
08/2020 - 12/2025

- **Relevant Coursework:** Data Structures, Intro to Algorithms, Electrical Circuits, Intro to Electronics, Microprocessor Systems, Advanced Computer Systems, Robotics, VLSI Design, Intro to Machine Learning.

Portland State University – Additional Undergraduate Coursework
04/2026 - Present

- **Relevant Coursework:** Verilog & FPGA Design, Microprocessor Interfacing & Embedded Systems

Skills

Digital Design and Verification Software: VHDL, Verilog, Assembly (MIPS)

Circuit Design and Simulation Tools: KiCAD, Cadence Virtuoso, LTSpice

Hardware Platforms: Arduino, Raspberry Pi, STM32, Xilinx, NVIDIA Jetson

Programming Languages: Python, C/C++, Java, MatLab, HTML/CSS, Bash

Frameworks: Docker, Git, Linux, REST API

AI / ML: PyTorch, OpenCV, Scikit-Learn, CNNs / R-CNNs, YOLOv8, ONNX, rPPG, RT-DETR

Experience

Siemens Digital Industries Software Internship, Portland OR – DevOps Intern – 06/2022 - 08/2022

- Developed a C# and Microsoft SQL Server-based REST API web service enabling users to view and submit requests for emulation machine access.
- Enhanced website performance by optimizing the portal using Bootstrap, AJAX, and JavaScript.

Projects

Computer Components and Operations Course Projects, RPI – 01/2024 - 05/2024

- Implemented hardware verification programs in Verilog, VHDL, and MIPS Assembly on a Xilinx FPGA (Basys 3), ensuring functionality through testing and validation.
- Designed and tested fundamental logic units such as Full Adder, ALU, registers, and RAM, ensuring proper functionality through simulations.

VLSI Design Course Projects, RPI – 09/2025 - 12/2025

- Designed schematics and layouts for various CMOS circuits using Cadence Virtuoso, ensuring optimal circuit design and performance.
- Ran design rule checks (DRC), layout versus schematic (LVS) verification, and post-layout simulations (PEX) to validate circuit functionality.

Microprocessor Systems Course Projects, RPI – 09/2024 - 12/2024

- Designed and developed embedded systems utilizing the STM32 platform in C and Assembly, integrating and testing peripherals like GPIO, Timers, UART/SPI, ADC/DAC, DMA, and USB interfaces.
- Tested system performance, including data transfer and motor control, using various hardware testing techniques and lab equipment.

Embedded Parking Sensor Project - 08/2025 - Present

- Designed and implemented a park-assist sensor using a LIDAR module to solve the issue of parking for legacy cars.
- Created a soldered prototype using a protoboard, LIDAR sensor module, Raspberry Pi microcontroller, and LED strip.
- Designed a board with compact form factor using KiCad to create a custom PCB

Real Time Object Detection Project - 03/2026 - Present

- Developed AI applications using NVIDIA Jetson hardware and Raspberry Pi camera module
- Implemented object detection software using YOLOv8 and RT-DETR models and Python Open CV library to identify if multiple objects are at risk of colliding
- Utilized rPPG model in combination with Python OpenCV library to identify an individual's biometric data