SANJANA PINGALI

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EDUCATION

University of Illinois at Urbana-Champaign August 2023 – December 2025
Master of Science in Electrical and Computer Engineering
University of Illinois at Urbana-Champaign August 2019 - May 2023
Bachelor of Science in Computer Engineering GPA: 3.76/4.0

Relevant Coursework: Data Structures, Machine Learning, Data Science, Algorithms and Models of Computation, Web Programming, Database Systems, Distributed Systems, Operating Systems, Digital System Laboratory
Published Papers: OPENRTLSET: A Fully Open-Source Dataset for Large Language Model-based Verilog Module Design

SKILLS

Programming: Python, MySQL, JavaScript, ReactJS, Ruby **| Embedded Tools & Languages:** C, C++, SystemVerilog, Verilog, KiCAD, x86 Assembly, ESP32, FPGA
Tools and Frameworks: Git, Pandas, React, TensorFlow, SciPy, Scikit-learn, Numpy, KiCAD
Honors/Achievements State Engineering Achievement Scholarship (Fall 2021, Spring 2022)**,** James Scholar

WORK EXPERIENCE

University of Illinois at Urbana-Champaign August 2023- July 2025
Graduate Researcher

- Built the largest known open-source labeled dataset of Verilog modules by curating diverse hardware designs and converting VHDL/C/C++ to Verilog, enabling a 25.8% improvement over the state-of-the-art in ML-based hardware design predictions. Applied prompt engineering and fine-tuning to evaluate and enhance model accuracy.
- Designed and executed Large Language Models such as Llama, Gemma etc on heterogeneous hardware in C++ and python, optimizing performance and resource utilization across CPU, GPU, and NPU platforms in collaboration with AMD.

University of Illinois at Urbana-Champaign August 2023- May 2025
Graduate Teaching Assistant for Senior Design (Fall 2023, 2024 List of Excellent Ranking Teachers)

- Provided technical guidance to over 100 students through weekly office hours, helping them navigate KiCAD, circuit design, project ideation, and soldering, leading to higher project completion rates.
- Mentored 18 student teams in developing IoT-based projects, ensuring they successfully integrated hardware and software components to bring their ideas to life.

University of Illinois at Urbana-Champaign August 2022- May 2023
Undergraduate Course Assistant for ECE 385 (Digital Systems Laboratory)

- Conducted weekly office hours to support students in mastering FPGA development, digital logic design, and SystemVerilog debugging, enhancing their hands-on learning experience.

National Center for Supercomputing Applications May 2022 – May 2023
Research Assistant

- Automated data collection and processing by writing Python scripts to extract, clean, and analyze data from JSON and XML files stored on AWS and cPanel.
- Collaborated with researchers to identify insights from large-scale data, improving scientific computing workflows.

Civis Analytics June 2022 – August 2022
Software Engineering Intern

- Designed and developed a new application feature enabling project cloning, significantly improving workflow efficiency
- Engineered a full-stack solution using Ruby (backend), ReactJS (frontend), and API integration, ensuring seamless functionality and scalability.
- Worked through all stages of the software development lifecycle, in an Agile environment with cross-functional teams.

EXTRACURRICULAR ACTIVITIES & LEADERSHIP

Society of Women Engineers September 2020 – October 2021
Team Technical: Machine Learning Project Lead

- Led a team under a Caterpillar-sponsored project, overseeing weekly meetings and model development.
- Developed a Machine Learning Regression Model, reducing idle wall time by 28%, minimizing the need for additional hardware resources, and improving execution efficiency.

PROJECTS

High-Frequency Trading Group Project

- Built a web application that mined 64,000+ job opportunities in high-frequency trading and stored them in a MySQL relational database, providing structured insights for finance professionals.
- Developed a Python-based backend with a ReactJS frontend, ensuring real-time data accessibility and user-friendly interaction.

Web Programming Final Group Project

- Developed a multi-tiered web app for startup investments using JavaScript, ReactJS, Python, and MongoDB.
- Created an API endpoint and incorporated user authentication for added security.

Senior Design Group Final Project (Won Best Presentation)

- Designed and implemented firmware for ESP32 to interface with GPS, accelerometer, and oximeter sensors.
- Built full-stack health-tracking system using embedded C++, python and real-time data transmission.
- Integrated sensor data with a secure web dashboard using embedded systems and hardware-software co-design principles.