SANJANA PINGALI

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EDUCATION

University of Illinois at Urbana-Champaign — August 2023 – August 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

SKILLS

Programming Languages: Proficient: Python, C++, MySQL, Javascript | **Familiar:** HTML, CSS, C, MongoDB, Neo4J, ReactJS, Ruby, SystemVerilog, x86| **Applications:** SolidWorks, Paraview, GCP, Amazon Web Services (AWS)
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- Present
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. (Paper Accepted to IEEE ICLAD 2025)
- Designed and executed Large Language Models such as Llama, Gemma etc on heterogeneous hardware, optimizing performance and resource utilization across CPU, GPU, and NPU platforms in collaboration with AMD.

University of Illinois at Urbana-Champaign — August 2023- Present
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)
- Collaborated on the innovation of a health-tracking technology, enabling secure storage of three health indicators, location data, and real-time alerts.
- Engineered ESP32 firmware linking GPS, accelerometer, and oximeter, applying Electrical Engineering and Computer Science principles for web interface.