

# Prakhar Gupta

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Champaign, IL

## EDUCATION

### University of Illinois Urbana Champaign

Expected: 2026

**Computer Engineering, B.S.** , James Scholar, Dean's List

GPA: 3.8/4.0

**Coursework:** Operating Systems, DSP, ASP, Vector-Space SP (grad-level), Systems Programming, Data Structures & Algorithms, Neural Circuits and Systems

## SKILLS

- **Languages:** Python, C/C++, SystemVerilog, Assembly, JavaScript
- **Libraries/Frameworks:** ROS, PyTorch, Docker, Linux, AWS, Scipy, Numpy, Pandas, Django, Git, Websockets, Node.js
- **Hardware:** STM32, USB, UART, Vivado, KiCad

## WORK EXPERIENCE

- **Course Assistant** Jan 2024 - Present
  - Honors Analog Signal Processing
    - Organized weekly lectures, and office hours to assist students with queries on advanced course material
- **Undergraduate Research Assistant** Jan 2023 - Present
  - Mobility and Fall Prevention Research Laboratory
    - Deployed a scientific computing pipeline to a HPC cluster. Automated result verification and slurm jobs with shell scripting
    - Maintained data-acquisition library to collect and synchronize serial data from medical instrumentation.
    - Developed performance-driven tools using cupy, for signal-processing and network analysis
    - Worked on [conference submissions](#) for applications in computational healthcare
- **Full Stack Intern** Jun - Aug 2023
  - Indian Institute of Technology
    - Developed front-end user systems and the authorization microservice for a full-scale internal platform
    - Implemented end-to-end services within an MVC architecture using Express, MongoDB, and other full-stack toolkits
    - Wrote and tested API endpoints with Postman, and implemented a real-time pub-sub service with websockets
- **IT Consultant (L2)** Sep 2022 - April 2023
  - Engineering IT - University of Illinois
    - Used sysadmin tools including AD, SCCM, and MECM to configure and support enterprise PC networks
    - Worked with automated imaging build and deploy tools in Jenkins. Used IPAM for subnet management
    - Configured drivers, and security settings for servers, remote containerization service, and other campus infrastructure

## ENGINEERING EXPERIENCES

<b>Open-Source at Illinois</b>	President	Increased member participation by 50% YoY, fund availability by 25%. Organized workshops to increase contributions to FOSS and popularize linux usage. Led several project teams to build projects including a compute cluster, AI chatbot, and computer vision project
<b>EV Concept</b>	Controls Team	Implemented USB to CAN protocol using STM32. Configured and set up docker containers and ROS environments for Nvidia Jetson and PC. Implemented MPC models using Nav to control steering and acceleration
<b>RISC-V Hackathon</b>	RV32I	Used the RV32I ISA to debug test files, write machine-mode exception handlers. Generated automated tests using the AAPG scripting library. Studied existing implementations of Out-of-order machines utilizing RV32I architecture
<b>Health Maker Hackathon</b>	1st Place	Designed embedded system utilizing the TI ULC1001 to clear vision in laparoscopic camera probes for surgical procedures. Awarded \$5000 by Carle College of Medicine
<b>Pulse</b>	Treasurer	Raised an additional 40% in funding for the conference. Worked with university administration to budget, purchase materials, and process transactions for the conference