Phani Jyothi Kurada

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Work Experience

- **Texas A&M University – Dept. of Kinesiology and Sports Management** *College Station, TX*
  Student Developer Sep 2025 – Present
  - Contributed as a Full-Stack Developer for ***sspain.ai***, a sports analytics platform for clients like NBA, WNBA, and Dallas Mavericks, developing responsive UIs using **React**, **Next.js**, **Tailwind**, and **ShadUI**, and integrating backend models via **FastAPI**, **RStudio**, and **rpy2** with **PostgreSQL**.
  - Collaborated in full **SDLC** with **Git**, **Jira**, and **pytest**, implementing role-based authentication and sponsorship prediction using statistical modeling.
- **Infosys** *Apr 2022 - Aug 2024*
  Digital Specialist Engineer Hyderabad, India
  - Supported a **U.K.-based telecom client** in cloud migration using **microservices architecture**, executing Linux operations and troubleshooting servers within **SDLC** workflows.
  - Enhanced the **Self-Service Portal UI** for British Telecom's network monitoring system, which visualizes real-time alerts and alarms, using **Angular**, RESTful **APIs**, and **Jenkins CI/CD**, improving operational efficiency by **25%**.
- **Cognizant** *Mar 2021 - Mar 2022*
  Programmer Analyst Trainee Hyderabad, India
  - Monitored large-scale **telecom networks** for a **U.S. client**, developing **Python-based diagnostic scripts** and using **Wireshark** for anomaly detection, improving reliability and recovery efficiency by **30%**.
- **Defence Research & Development Laboratories (DRDL/DRDO)** *May 2019 – Sep 2020*
  Research Intern – Independent Verification & Validation (IV&V) Lab Hyderabad, India
  - Engineered a high-fidelity **UDP-based satellite communication simulation framework** leveraging **C++ socket programming** and **OMNeT++** to emulate real-time ground-to-satellite communication links and network propagation dynamics.
  - Implemented advanced **jitter mitigation**, **latency drift correction**, and **adaptive buffering** mechanisms with **timestamp synchronization** and **multi-threaded message handling**, ensuring deterministic data transfer under stochastic network conditions.

Projects

- **Tiny SNS – Scalable Distributed Social Network** | *C++, gRPC, Docker, Fault Tolerance* *Fall 2025*
  - Designed and implemented a **C++/gRPC-based fault-tolerant distributed system** with a **Coordinator–Server–Client** architecture supporting multi-cluster synchronization and automatic fault recovery.
  - Implemented **heartbeat monitoring**, **real-time timeline streaming**, and **thread-safe message handling** using **RabbitMQ**-based inter-cluster synchronization for high availability and low latency.
- **OS Kernel from Scratch** | *C++, x86, Paging, Scheduling, File Systems* *Spring 2025*
  - Developed a miniature x86 OS kernel with bitmap-based memory allocation, two-level paging, and demand paging using recursive page tables. Implemented kernel threads with a preemptive round-robin scheduler driven by hardware timer interrupts. Built a non-blocking interrupt-driven disk driver and a custom inode-based file system supporting 64KB files, ensuring reliable persistent storage and efficient system performance.

Skills

- **Programming Languages:** Python, JavaScript, TypeScript, Java, C++, C#, C, Ruby, HTML5/CSS3/SASS, XML, JSON, PHP, Bash, PowerShell
- **Frameworks & Web Technologies:** React, Angular, Express.js, Node.js, Spring Boot, Ruby on Rails, .NETs, REST APIs, Microservices, Axios, jQuery, Postman, FastAPI, Tailwind, ShadUI
- **Databases & Data Systems:** MongoDB, MySQL, Oracle, NoSQL,PostgreSQL
- **Cloud & DevOps:** AWS, Docker, Jenkins, Git/GitHub, Jira, CI/CD Pipelines, Cloud Migration, Virtualization, Containerization
- **Simulation, Networking & Communication Systems:** OMNeT++, NS-3, Satellite Communication Protocols, Network Programming (TCP/UDP Sockets), UDP/TCP Reliability Real-time Systems, Threaded Event Simulation, Performance Profiling, Wireshark, Real-time Monitoring, Log Analysis, Alerting, Network Diagnostics, Routing & Congestion Control, QoS Analysis
- **Software Engineering, Tools & Technologies:** Functional Test Case Design (manual), System Design, Data Structures & Algorithms, Distributed Processing Systems, Network Programming (C++ Sockets, TCP/UDP), Computer Networking, Operating Systems, Computer Architecture, Linux, Visual Studio Code

Education

- **Texas A&M University** *Aug 2024 - May 2026*
  Masters in Computer Science, CGPA: ***3.8/4.0*** College Station, TX
- **Jawaharlal Nehru Technological University** *Aug 2016 - Sep 2020*
  Bachelor of Technology in Computer Science & Engineering, CGPA: ***9.3/10*** Hyderabad, India