

Penchala Siva Prasanth Kasa

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EDUCATION

University of Wisconsin, Madison, USA

Sep. 2025 - May 2027

Master of Science(MS) in Computer Science

School of Computer, Data & Information Sciences

- Operating Systems, High Performance Computing, Database Management Systems, Big Data Systems, Machine Learning.
- Graduate **Teaching Assistant** for CS 640: **Computer Networks**

Indian Institute of Technology, Kharagpur, India

July. 2018 - May 2023

Dual Degree - Bachelor(Hons.)+Master of Technology

Electronics and Electrical Communication Engineering

- **Graduate Teaching Assistant** for Image and Video Processing - Autumn 2022
- **Graduate Teaching Assistant** for Embedded Systems Design - Spring 2023.
- **Coursework:** Data Structures and Object Representation, ML/AI, Digital Image Processing, Computer Communication and Networking, Embedded Systems Design, Knowledge Modelling & Semantic Technologies

PROFESSIONAL EXPERIENCE

Software Engineer @ Enphase Energy, Bangalore, India

Jul. 2023 - Jul. 2025

- **Ground-Up New Product Software:** Developed the complete software stack from scratch for a new metering device, encompassing OS bootstrapping and writing **all application-level code** for reliable data transmission.
- **Runtime Resource Minimization:** Redesigned the entire data propagation flow between Enphase devices, optimizing memory management and data structures. This reduced **RAM** usage from 98% to 82% and **cut storage** by 20%.
- **Core Systems Development:** Maintained and developed software in **C/C++** for Bootloader, Battery, and Micro-inverters, optimizing multi-threaded processes and utilizing **Protobuf** to ensure efficient communication, and stability.
- **Skills:** C, C++, CAN (Controller Area Network), Zigbee, Protobuf, Mbed OS, Zephyr OS

Software Intern @ Visa, Inc., Bangalore, India

May 2022 - Jul. 2022

- Developed predictive models to assess transaction risk within 10ms, enabling real-time fraud detection.
- Developed microservices in **Go, Java** to automate model onboarding, saving 2 weeks of man-hours per configuration.
- Migrated alert and model data from several **yaml** files across multiple services to a centralized **MySQL** database.
- **Skills:** Golang, Java, Python, YAML, Spark, Hadoop, Kafka, MySQL

Cloud Intern @ 3rdi Corp - Oqlo.ai, California, USA - Remote

Jun. 2021 - Dec. 2021

- Contributed to the development of OQLO Mobile Management solution using **Firestore** Cloud Messaging.
- Implemented end-to-end AES-256 encryption to secure data at rest(**AWS S3**) and in transit over **HTTPS/SSL**.
- Integrated SHA-256 hashing with **HMAC** to ensure the integrity and authenticity of data streams.
- Designed and implemented dynamic scaling - using **AWS Auto Scaling** and **Azure Load Balancer**, combined with queue-based resource management, pooling and sharding to ensure real-time performance during peak demand.
- **Skills:** Amazon Web Services (AWS), Azure, Firestore Cloud Messaging, HTTPS/SSL

SELECTED PROJECTS

Fault-Tolerant Real-Time Resource Allocation Framework

Mar. 2024 - Oct. 2024

- Architected a high-throughput data pipeline integrating Geospatial/IoT sensor data for CNN-TabNet prediction, establishing a robust framework that automatically prioritizes and **allocates** critical resources based on real-time severity and proximity.
- Designed fault-tolerant logic ensuring **continuous** service delivery and **resource uptime** during system failures.
- Developed **interactive dashboard** utilizing real-time data and decision support for rapid operational intervention.
- **Skills:** JavaScript, HTML5/CSS, Python, TabNet, CNN, WebSockets, MQTT

Dual degree Thesis | Dept. of Artificial Intelligence, IIT Kharagpur

Aug. 2022 - May 2023

- Presented at **Empower 2025**, this work developed a real-time framework to convert whispered speech to natural audio.
- Architected a comprehensive software solution leveraging a compact **autoencoder** and Bi-LSTM to enhance speech quality.
- Engineered a **lightweight** and scalable system that achieved a remarkably low 12.24% Word Error Rate (WER).
- **Skills:** Python, Matlab, PyTorch, Pandas, Keras, NumPy, OpenCV, Tensorflow, Sklearn, Matplotlib, Plotly

NoFi - Offline Audio Communication Platform | MADHACKS 2025, UW Madison

Nov. 2025

- Built a peer-to-peer web app enabling offline text/voice communication using audio frequencies (FSK) without internet; developed with React, Web Audio API, and client-side AI.

ACHIEVEMENTS

- Nationally Ranked 1250 in the Graduate Aptitude Test in Engineering (GATE - 2022). (Top 1%)
- **Nationally Ranked 23** among 125,000 candidates for IIT JEE Mains Paper-II (2018). (Top 0.018%)
- Nationally Ranked 1318 among 230,000 candidates for IIT JEE Advanced (2018). (Top 0.5%)