

# Harshitha Pydimalla

## Software Engineer Intern

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### Professional Summary

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Master's graduate in Artificial Intelligence with experience in Python, C++, Java, and full-stack development. Skilled in building APIs, microservices, and scalable systems, with hands-on project experience in machine learning, time-series forecasting, and AI-powered web applications. Eager to contribute as a Software Engineer Intern at Meta by writing production-ready code, solving complex large-scale technical challenges, and collaborating on products that connect and impact billions of users worldwide.

### Skills

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**Programming Languages & Tools:** Python, C++, Java, Matlab, MySQL/SQL, NumPy, Pandas, Jupyter Notebook, TensorFlow, PyTorch, Git, GitHub, C#, JavaScript, HTML, CSS

**Backend Development & Deployment:** API Development, REST APIs, Microservices, API/JSON Integration, Object-Oriented Programming, Data Structures & Algorithms, Pydantic, Alembic

**Cloud & Infrastructure:** AWS (Lambda, API Gateway, S3), Terraform, Docker

**Software Engineering Practices:** Version Control, Agile Development. Debugging & Testing, Code Optimization

**Machine Learning & AI:** Machine Learning, Deep Learning, Natural Language Processing, Computer Vision & Image Processing (OpenCV, LBPH)

**Statistical & Time Series Analysis:** Statistical Analysis, ARIMA, SARIMA, Load Forecasting

**Data Visualization:** Matplotlib, Seaborn

**Soft Skills:** Problem-Solving, Analytical Thinking, Team Collaboration, Communication, Adaptability, Attention to Detail, Time Management, Multitasking, Ownership Mindset, Enthusiasm to Learn

### Projects

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#### Web Traffic Time Series Forecasting

02/2025 – 05/2025

- Developed time series forecasting models to predict future pageviews of Wikipedia articles across multilingual languages.
- Used SARIMA model with log-transformation and seasonal differencing to capture weekly and yearly patterns.
- Applied chronological train/validation/test split to ensure robust evaluation and prevent data leakage.

**Tools:** Python, Pandas, Statistical Models (SARIMA), Matplotlib, NumPy, seaborn, scikit-learn

#### Analysis of Physical and Mental Health Issues due to excessive screen time in youngsters

01/2023 – 04/2023

- This project analyzes the effects of excessive screen time on the physical and mental health of individuals aged 16-2 using survey data from 685 students.

- After cleaning and encoding the data, statistical tests identified significant links between screen time and health issues. A Random Forest model was developed to predict the negative impact of screen time over four hours, achieving 100% accuracy.
- Findings reveal that extended screen use is associated with headaches, sleep problems, back pain, and decreased physical activity, highlighting the need for balanced digital habits to support better health.

**Tools:** Survey & Data Analysis, Random Forest, CHI-Square test, Feature Correlation Analysis, Feature Engineering.

### Face Recognition using LBPH Algorithm

02/2022 – 03/2022

- Developed a face recognition system using the Local Binary Patterns Histograms (LBPH) algorithm to identify and verify individuals from images.
- The project involved preprocessing face images, extracting facial features with LBPH, and training a classifier for accurate recognition.
- The model demonstrated robustness to variations in lighting and facial expressions, making it suitable for real-time applications like access control or attendance systems.

**Tools:** Python, Machine Learning, OpenCV, Image processing, Numpy, scikit-learn, Jupyter Notebook

### AI-Powered Web Support for Formal Verification and Proof Assistants

04/2025 – 09/2025

- Developed *AxiomAI*, a web-based platform combining Large Language Models, Retrieval-Augmented Generation (RAG), and a Proof API to support learning and experimentation with proof assistants (Coq, Isabelle, Z3).
- The system enables users to ask natural language queries via a chatbot in two modes (LLM-only, LLM+RAG) and generate proof snippets, with live execution supported in Z3. Designed modular backend services (FastAPI, Flask) and a lightweight frontend with metrics logging for latency, accuracy, hallucination rate, and proof success rate.
- Evaluations showed RAG significantly improved factual grounding and reduced hallucinations compared to LLM-only baselines. The project demonstrates how AI can lower the entry barrier to formal verification while providing an extensible research and educational tool.
- **Tools:** Python, FastAPI, Flask, HuggingFace Transformers, FAISS, BM25, Hybrid retrieval, Z3, Coq, Isabelle, JavaScript, HTML/CSS, KaTeX, Prism.js, Stanage HPC, GitHub

## Education

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### Karunya Institute of Technology and Sciences

06/2019 – 07/2023

*Bachelor of Technology in Computer Science and Engineering*

Coimbatore, Tamil Nadu

- Secured an overall percentage of 70.11%

### The University of Sheffield

09/2024 – 09/2025

*Masters in Artificial Intelligence*

Sheffield, United Kingdom

## Extracurricular Activities

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### Member of National Service Scheme

07/2019 – 04/2023

### Member of Nature Club

01/2022 – 04/2023

Interests

Reading | Theological Reasearch | Singing | Travelling

Languages

English	● ● ● ● ●	Telugu	● ● ● ● ●
Hindi	● ● ● ● ●	Tamil	● ● ● ● ●