

# Mahendra Kumar

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## EDUCATION

### University Of Maryland, College Park

August 2022 – May 2026

*Bachelor of Science in Computer Science* | GPA: 3.9/4.0

*Minor in Statistics*

**Relevant Coursework:** Data Structures, Algorithms, Computer Systems, Parallel Computing, Data Science, Machine Learning, Multimodal Deep Learning, NLP, Linear Optimization, Linear Algebra, Statistics

## TECHNICAL SKILLS

**Languages:** Python, Java, C, Assembly, SQL, JavaScript, R

**Frameworks:** Node.js, Express, React, FastAPI, TensorFlow

**Developer Tools:** Docker, Git, Github, Google Cloud Platform (GCP), Postman

**Libraries/Databases:** pandas, NumPy, Scikit-learn, Matplotlib, CUDA, MongoDB

## EXPERIENCE

### Department of Computer Science, UMD

February 2025 – Present

*ML Research Assistant*

*College Park, MD*

- Placed **1st** in the FinRL Leaderboard Competition (Task 3); co-authored a peer-reviewed [IEEE IDS 2025 paper](#).
- Finetuned language models (Qwen2.5 and DeepSeek-R1 1.5B) via Supervised Fine-Tuning, Direct Preference Optimization, and Reinforcement Learning on **20+** financial NLP datasets.

### Department of Computer Science, UMD

January 2024 – Present

*Teaching Assistant*

*College Park, MD*

- Lead weekly 50-minute lab sessions for **36+** students across 4 semesters, teaching Java OOP, data structures, and Computer Systems (C, memory management, assembly, Unix).
- Mentor students in debugging, problem-solving, and core concepts during office hours, and evaluate assignments.

### Sitare Foundation

February 2023 – Present

*Information Technology Manager*

*Palo Alto, CA*

- Secure hundreds of student tablets with MDM software and perform tasks like bulk email creation, report card generation, mass email and SMS distribution, and attendance tracking from Zoom logs.
- Serve as webmaster, managing the organization's website and Google Workspace for **500+** members.

### HPE Juniper Networking

May – August 2025

*Software Engineering Intern*

*Sunnyvale, CA*

- Built an automated pipeline to map **22K+** OpenConfig paths to Junos CLI commands by using Sentence Transformer embeddings and RAG (Retrieval-Augmented Generation), expanding coverage by **40x**.
- Reduced manual validation time from months to under **2** days, significantly accelerating network configuration verification.

### Beans.ai

July – August 2024

*Software Engineering Intern*

*Palo Alto, CA*

- Designed a semi-automated feedback system that validates model predictions, flags misclassified images for review, and automatically updates datasets in Google Cloud Storage, enabling continuous retraining and model improvement.
- Enhanced the accuracy of the package-service rating model by **12%**, improving reliability of automated image evaluation and reducing manual intervention for data curation.

### KlearNow.ai

June – August 2023

*Software Engineering Intern*

*Santa Clara, CA*

- Optimized system performance by containerizing the database with Docker, migrating to a local environment, reducing remote dependencies, and improving query execution time by **80%**.
- Enhanced API documentation with OpenAPI YAML specifications using Stoplight, ensuring well-structured endpoints.

## PROJECTS

### GPU-Accelerated Game of Life | C++, CUDA, GPU

- Implemented workload striding across threads/blocks for scalability and maximizing efficiency.
- Optimized Conway's Game of Life using GPU parallelism, achieving **10x** faster runtime on large grids.

### MicroCaml Interpreter | OCaml, Git, Regex

- Built a dynamically typed OCaml subset with runtime type-checking.
- Developed Lexer, Parser, and Interpreter for AST generation and evaluation.

## AWARDS

### Swami Vivekananda Scholarship

August 2022 – Present

- Full college tuition merit scholarship for an economically disadvantaged student.

### Sitare Foundation Scholarship

May 2016 - May 2022

- Six-year full scholarship covering middle and high school for a high-potential underprivileged student.