

Ashwath Vaithinathan Aravindan

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GitHub: [Mystic-Slice](#) | **Scholar:** [Ashwath](#) | **LinkedIn:** [ashwath-va](#) | **Website:** [mystic-slice.github.io](#)

EDUCATION

University of Southern California

Aug 2024-May 2026(expected)

Master of Science in Computer Science (Artificial Intelligence)

Amrita Vishwa Vidyapeetham | GPA: 9.57/10

Oct 2020-Jun 2024

Bachelor of Technology in Computer Science and Engineering

Gold Medalist (Rank 1st/421)

EXPERIENCE

Research Intern

[Information Sciences Institute, USC](#)

Oct 2024-Present

Los Angeles, CA

- Studying LLM hallucinations in the context of Chain-of-Thought prompting, guided by [Dr. Mayank Kejriwal](#).

Research Intern

[CREB, Universitat Politècnica de Catalunya](#) | [Project](#)

Jan 2024-Jul 2024

Remote

- Implemented a synthetic data generator and conducted a comparative study on the effectiveness of CNNs & ViTs with attention mechanisms in identifying and localizing Retinopathy of Prematurity (RoP), guided by [Dr. Raul Benitez](#).

Research Intern

[Amrita x Sony - SSUP](#)

Aug 2023-Jun 2024

Coimbatore, India

- Devised a control system for efficient low-cost food drying resulting in a 10 - 15% improvement in drying efficiency.

Open-source Developer

[Helmholtz Analytics Toolkit \(Heat\)](#) | [Project](#)

Jun 2022-Jun 2024

Remote

- Developed the new sparse module for Heat - a distributed tensor framework for HPC systems with 50k+ downloads.
- DCSR_matrix and DCSC_matrix display about 76% improvement in performance in place of dense matrices.

Software Engineering Intern

[Intuit](#)

May 2023-Jul 2023

Bangalore, India

- Contributed to the revamp of ItsDeductible - a product of Intuit for tracking charitable donations with over 200k users.
- Constructed an intuitive web experience on a micro-frontend architecture with caching, logging, and analytics.

Open-source Developer

[MuseScore](#) - Google Summer of Code'21 | [Project](#)

May 2021-Aug 2021

Remote

- Designed the Chord Symbol Style Editor, reducing custom XML file usage by 80% and enhancing accessibility.

PUBLICATIONS

- [1] TS-CNN: a three-tier self-interpretable CNN for multi-region medical image classification | IEEE Access | [Paper](#) | [Code](#)
- [2] Building of Computationally Effective DL Models using Attention-Guided KD. | IEEE ICoAC | [Paper](#) | [Code](#)
- [3] Citation Worthiness Assessment using Deep Learning Techniques. | IEEE CONECCT | [Paper](#)

PROJECTS

NeoMorpheus | [Project](#) | *Challenge Winner in Cerebral Beach Hackathon*

Oct 2024-Present

- Developed an AI-powered cybersecurity education platform that generates personalized courses for both general public and professionals, leveraging multiple LLM models (WhiteRabbitNeo, GPT-4o) and RAG technology.
- Implemented interactive features including automated quiz generation, course history tracking, and text-to-speech, while integrating Stable Diffusion for dynamic image generation and LlamaIndex for research paper scraping and processing.

SmartVidIndex | [Project](#)

Jul 2024-Present

- Built an intelligent video index that can answer user queries and retrieve relevant snippets from a video collection.
- Utilized multi-query generation, reciprocal rank fusion and heirarchical indexing to improve search efficiency and accuracy.

SKILLS

Deep Learning: TensorFlow & Keras, PyTorch, Scikit-learn, Numpy, Scipy, Pandas, Matplotlib, Pillow, OpenCV

Web/App Development: React.js, Next.js, Redux, Redux-Saga, GraphQL, Flask, Langchain, Qdrant, Firebase (Firestore, Auth, Cloud Storage), Sqlite3, SQL, Qt(C++), Electron.js

Languages: Python, C++, TypeScript, Java, Go, C, Rust

LEADERSHIP & ACHIEVEMENTS

- Intuit's Spotlight recognition - for exemplary performance during the summer internship.
- FOSS Lead, GDSC - guided students and organized seminars on development of open-source software.
- Reach an all-time highest rating of 1645 (Expert) on [Codeforces](#) and 1942 on [Codechef](#).
- 3x Regionalist in the ICPC and placed 231st in Round G and 314th in Round H (of 10k+ globally) in Google Kickstart.