

KARAN VASUDEVAMURTHY

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Education

The University of Texas at Arlington

Master of Science in Computer Science

Aug 2023 – May 2025

Arlington, Texas

Dayananda Sagar College of Engineering

Bachelor of Engineering in Computer Science and Engineering

Aug 2019 – May 2023

Bangalore, India

Experience

The University of Texas at Arlington

Information Security Lab Instructor / GTA

Aug 2024 – May 2025

Arlington, Texas

- Modernized lab functionalities and ensured seamless operational continuity by rewriting legacy scripts for a newly rebuilt lab system, creating an updated and efficient learning environment.
- Enhanced student understanding and engagement for **50+ students per semester** in Information Security concepts, including encryption, Linux access management, setuid programs in C, and buffer overflow attacks, improving lab comprehension and practical skill application.
- Elevated students' practical understanding of real-world security threats by orchestrating and hosting Capture The Flag (CTF) competitions and hands-on security exercises, resulting in greater student preparedness for cybersecurity challenges.
- Earned recognition as **one of the best TAs of the semester** through exceptional teaching, dedicated student support, and commitment to enhancing the learning experience, positively impacting students in the cybersecurity lab.

The WAW Podcast

Web Developer

Feb 2025 – Mar 2025

Freelance Project

- Dramatically increased audience reach, user engagement, and discoverability by designing, developing, and launching a fully responsive website for the podcast **within three weeks**, significantly expanding listener access and interaction.
- Enabled real-time website updates and simplified content management by implementing automated deployment via Git integration, ensuring immediate reflection of code repository changes on the live site.
- Provided podcast hosts with enhanced content strategy and engagement insights by integrating Google Analytics, allowing them to monitor detailed user statistics such as visitor counts and session durations.

Visteon Corporation

Software Engineering Intern — Computer Vision

Sept 2021 — Mar 2025

Bangalore, India

- Improved real-time driver assistance system **accuracy by 25%** by optimizing facial landmarking algorithms and reducing noise via MediaPipe filtering, validated using behavior test suites on Mahindra platforms
- Reduced edge detection **latency by 40%** by shifting processing from cloud to on-device OpenCV inference on Android, enabling frame rates to meet real-time Driver Monitoring System threshold
- Contributed to surround view photometric alignment and Alexa integration for Mahindra XUV700, helping it achieve **77% market share** in the mid-size SUV segment, validated through internal UX studies and customer feedback

Projects

Tune Tracer | C#, .NET

Apr 2025 – Current

- Built a Shazam-like music recognition system using spectrogram peak hashing to generate unique audio fingerprints, which were stored in a custom graph-based database for fast lookup and recognition across noisy or altered audio samples.
- On successful match, fetched metadata (title, artist, album, and popularity) from the Spotify API to enrich results; verified accuracy by comparing hash match offsets and confirming metadata alignment across studio, live, and remixed versions.

LocalGPT | Python, LangChain

Oct 2023 – Feb 2024

- Engineered a private chatbot by deploying Nous-Hermes-13B-GGML locally, **ensuring privacy** for sensitive conversations in academic and internal use cases
- Demonstrated **100% independence from remote APIs**, reducing cost and privacy risks.

Fake News Detection | Python, NLP

Jan 2023-Apr 2023

- Improved false news detection F1 score by 12% over baseline models by **pioneering India's first government-verified news dataset**, created through web scraping the official Press Information Bureau site and leveraging BERT embeddings combined with cosine similarity to assess tweet reliability
- Developed a Telegram chatbot capable of real-time sentiment analysis, political bias detection, and credibility scoring, demonstrating a practical application of NLP techniques to improve news trustworthiness.

Technical Skills

Programming Languages: Go, Python, C++, C#, SQL, HTML/CSS, JavaScript

Frameworks & Libraries: React, Jest, Angular, Flask, .NET, TensorFlow, OpenCV, Dlib, MediaPipe, LangChain

Developer Tools & DevOps: VS Code, Android Studio, Docker, Firebase, Postman, Git, GitHub Actions

Cloud Services & OS: AWS, Linux, SQLite

Security Tools & Frameworks: Metasploit Framework, Wireshark, Nmap, Hashcat, Autopsy