KARAN VASUDEVAMURTHY

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Skills

- **Languages:** Python, C++, JavaScript, SQL, HTML/CSS
- **Frameworks/Libraries:** React, GSAP, TailwindCSS, Vite, TensorFlow, OpenCV, MediaPipe
- **Cloud & Tools:** AWS, Docker, Firebase, Git, Postman, WandB, Cisco Packet Tracer

Experience

Cybersecurity Lab Instructor/ GTA — **University of Texas at Arlington** — **Aug 2024- May 2025**

- Delivered hands-on lab sessions to **50+ students per semester** on encryption, buffer overflows, access control, and keyloggers, while reconstructing lab systems with secure toolchains
- Reduced TA **manual effort by 30%** by automating lab validation and setup processes using Bash and Python, allowing for faster grading and seamless lab execution across 8 course sections

Software Engineer – Computer Vision (Intern) — **Visteon Corporation** — **Sept 2021 – Mar 2022**

- 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

ForgeOS: [GitHub] — **Apr 2025- Current**

- Built a minimal operating system kernel from scratch using C++ and Assembly with GRUB and Multiboot, implementing interrupt handling, memory mapped I/O, and screen rendering

The WAW Podcast Website: [Website] — **Feb 2025- Mar 2025**

- **Tripled podcast traffic** within two weeks by designing an attractive, visually engaging site using Vite and GSAP, delivering a fast and seamless user experience
- Enhanced site reliability and speed by deploying on Netlify with a custom domain, reducing load times and improving global accessibility; growth validated via Google Analytics tracking **across 20+ countries**

LocalGPT: [GitHub] — **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: [GitHub] — **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. Deployment was limited due to API restrictions

Certifications

- **Amazon Web Services-** AWS Certified Solutions Architect **(Ongoing)**
- **Meta-** Introduction to Android Mobile Application Development **(Jul 2024)** Certificate

Education

- **Master of Science** — *Computer Science* — **University of Texas at Arlington** — *GPA: 3.83 / 4.0* — **Aug 2023 -May 2025** — *Arlington, TX, US*
- **Bachelor of Engineering** — *Computer Science and Engineering* — **Dayananda Sagar College of Engineering** — *GPA: 3.4 / 4.0* — **Aug 2019 -May 2023** — *Bangalore, India*