

Harshith Kasthuri

(706) 254-9766 | kasturiharshith02@gmail.com | [LinkedIn](#) | [GitHub](#)

SUMMARY

I recently completed my Master's in Computer Science from the University of Georgia and have 1+ years of experience working with AI systems alongside building full-stack applications and cloud-based tools. I've contributed to projects ranging from 3D hand tracking for research to developing and deploying web and cloud-native apps. I enjoy creating practical, reliable software that solves real problems and am eager to bring this hands-on approach to a software engineering role.

EDUCATION

University of Georgia, School of Computing | *Master of Science, Computer Science (GPA: 3.94)* **Aug 2023 - May 2025**

Osmania University | *Bachelor of Engineering, Computer Science and Engineering (GPA: 8.94)* **Aug 2019 - Jun 2023**

RELEVANT EXPERIENCE

Cognition and Dexterity Laboratory, University of Georgia **Jan 2024 - May 2025**

Graduate Research Assistant

Athens, GA

- Enhanced MediaPipe Hands with stereo calibration and depth estimation, achieving an RMSE of less than 1 cm with respect to physical ground-truth distances for finger tapping tasks, ensuring highly accurate and reliable 3D hand tracking for biomechanical studies.
- Achieved precise hand tracking performance, validating 3D finger distances against physical ground truth with an RMSE of less than 1 cm, ensuring reliable data for downstream analysis.
- Built a Python-based GUI application that reduced manual preprocessing time by approximately 50%, streamlining data collection for high-frame-rate video and increasing throughput of hand-tracking experiments from 10 to 20 tasks per day.
- Engineered and deployed Docker-based environments, slashing setup times from 2–3 hours to under 10 minutes and ensuring 100% reproducibility across systems, reducing environment-related errors by over 90%.
- Automated AWS (EC2, S3) pipelines for high-speed video data, reducing manual processing by 80% and enabling secure, scalable storage and retrieval.

TECHNICAL SKILLS

- **Programming Languages:** C, C++, Java, Python, Golang
- **Programming Concepts:** Object-oriented Programming(OOP), Data Structures, Algorithms, Design Patterns
- **Frontend Development:** HTML, CSS, JavaScript, React, TypeScript, Angular
- **Backend Development:** Node.js, Express.js, Flask, Django
- **Databases:** MySQL, PostgreSQL, MongoDB, SQLite
- **Cloud Platforms:** AWS (EC2, Lambda, S3), Azure (App Services, VMs, Blob Storage), GCP (Compute, Firebase)
- **DevOps & Infrastructure:** Jenkins, GitLab CI/CD, Docker, Kubernetes, Terraform, RabbitMQ, Redis, Apache Kafka
- **Computer Vision:** Image Processing, Object Detection and Recognition, Pose Estimation, 3D Vision

PROJECT EXPERIENCE

Distributed Transaction Processing using PBFT

- Built a scalable Byzantine Fault Tolerant system using Linear PBFT, efficiently processing 200+ secure transactions across 7-node clusters with linear communication complexity.
- Ensured system reliability and consistency under adversarial failure scenarios by implementing fault-tolerant consensus protocols in Go.

Cloud-Native Resource Monitoring App

- Developed and containerized a Python Flask-based system monitoring application using psutil and Docker, ensuring consistent local and cloud execution, and pushed Docker images to AWS ECR for scalable deployment.
- Automated full cloud-native deployment to AWS EKS using Python (Boto3, Kubernetes client), covering ECR setup, EKS provisioning, app deployment, and exposure via port forwarding.

Movie E-Booking System

- Developed a full-stack movie booking web application using the PERN (Postgres, Express, React, Node), enabling secure user login, seat booking, offers, and admin control.
- Designed an efficient PostgreSQL schema using UML diagrams and applied MVC/system design patterns to ensure data integrity, improve query speed by 25%, and enhance code scalability and maintainability.

Multilingual Q/A Bot using BERT

- Extracted data from the College Website and optimized the Distil-BERT QA model specifically for college-related queries, resulting in a 75% answer accuracy and enhanced user experience.
- Created a seamlessly integrated multilingual support system using the Google Translate API, enhancing user experience and crafted an intuitive and user-friendly interface to facilitate effortless interaction.

ACHIEVEMENTS

- Awarded Best Poster for the project “Marker-less Hand Tracking and Finger Movement Assessment for Rehabilitation” at the 2025 School of Computing (SoC) Research Day, University of Georgia.
- Top 10 Graduate in Computer Science at Osmania University (Bachelor's Degree).
- Selected as one of the Top Coders among 356,000+ participants in TechGig Code Gladiators 2022 – India's largest coding competition.