

Omkar Chittar

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EDUCATION

University of Maryland

Master of Engineering in Robotics — 3.97 CGPA

Relevant Coursework: Machine Learning, Deep Learning, Reinforcement Learning, Computer Vision

College Park, MD

Aug 2022 – May 2024

WORK EXPERIENCE

Insight Global, LLC

Software Engineer, AI Strategy & Solutions

Orlando, FL

Nov 2025 – Present

- Leading AI integration and delivery across **Universal Creative** and **Universal Destinations and Experiences**, partnering with stakeholders to scope use cases and drive prototypes into production
- Shipped multiple **GenAI solutions**, including a **domain expert chatbot** for internal knowledge discovery and decision support across teams
- Built end-to-end **RAG + agent workflows** (ingestion, chunking/embeddings, vector retrieval, grounded generation) with **guardrails** and **source attribution** to improve reliability and trust
- Automated recurring **manual workflows** using LLM-based extraction/classification and integrations with enterprise systems, reducing operational overhead and cycle time for high-volume processes
- Implemented an **LLM evaluation & regression harness** (golden sets, retrieval checks, prompt/embedding experiments) to prevent quality drift and enable safe iteration
- Hardened solutions for production with secure access controls, logging/monitoring, and documentation to support adoption and long-term maintainability

Insight Global, LLC

Data Scientist

Redmond, WA (Remote)

Aug 2024 – Aug 2025

- Spearheaded the integration of AI solutions into media post-production pipelines for **FOX Sports**, enhancing efficiency and significantly reducing manual effort in post-production workflows
- Decreased **issue resolution time 35%** by developing a **Slack AI agent** (AWS Bedrock, Lambda) to monitor ML pipelines; added **function calling & guardrails** to surface drift alerts, exceptions, and health insights in real time
- Reduced **ad-hoc reporting effort 40%** by building a **RAG** conversational assistant (FAISS, Bedrock) that translated natural language to **SQL**; delivered **p95 ~1.3s** latency for producers
- Built an **LLM evaluation harness** (synthetic queries, oracle sets, *Ragas* precision@k) to tune prompts/embeddings; improved top-5 retrieval by **+12 p.p.**
- Optimized serving with **prompt caching** and lightweight routing on Databricks; reduced per-request cost **28%** without quality loss
- Streamlined operations on **2M+ digital assets** by automating metadata extraction and **ETL** (BigQuery, Spark, Cloud Functions); features powered engagement forecasting (LSTM, transformers) that lifted **user retention 25%**

Sakar Robotics

Software Engineer

Pune, India

Jul 2019 – Jun 2022

- Implemented **stereo depth + point-cloud registration** (OpenCV, Open3D, ICP) for grasping; increased pick success **18%** on cluttered bins
- Performed **multi-camera calibration** (intrinsics/extrinsics, PnP/RANSAC); reduced pose error **22%** vs. baseline
- Fused frames into a **TSDF** map for robust 6-DoF tracking; cut re-localization time during occlusions by **35%**
- Saved **\$10,000/year** by deploying a vision-based construction-site monitoring solution using **NeRFs**, reducing manual inspection costs and improving safety oversight
- Achieved **30% precision gains** in manipulation by developing reinforcement learning (**DDPG + HER**), accelerating development cycles

SKILLS

Languages: Python, SQL, C++, R

LLMs/GenAI: RAG, vector search, function calling & agents, prompt engineering, guardrails, evaluation (Ragas), LangChain, OpenAI/Bedrock, LangGraph

3D Vision: Stereo depth, epipolar geometry (E/F), PnP/EPnP, ICP/registration, SLAM, COLMAP, TSDF/OctoMap, MiDaS/DPT, OpenCV, Open3D, PyTorch3D

ML/DS: Predictive Modeling, Deep Learning, NLP, Reinforcement Learning (DDPG, HER)

Cloud/Data: GCP (BigQuery, Vertex AI, Cloud Functions), AWS (Bedrock, Lambda, SageMaker, S3), Azure, Databricks, Snowflake, Spark, Airflow, Kafka, Postgres/BigQuery

MLOps/Dev: MLflow, CI/CD, Docker, Git, REST API, prompt caching, feature store

LEADERSHIP AND PUBLICATIONS

Mentor, First Lego League (FLL) - helping middle school students design and code robots since 2024

Recruitment & Retention Manager, Department of Transportation Services, University of Maryland

Proprietor, Sai Classes Pune - founded and taught the computer science and mathematics curriculum

Publications: 2 peer-reviewed papers on exoskeleton systems — [MATPR 2022](#), [MATPR 2022](#)