Shreyas Menon

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EDUCATION

University of California, Berkeley — Expected May 2028
B.A. in Data Science | Minor: Economics | Transfer Fall 2026 — *Berkeley, CA*

De Anza College — Jun 2024 – Jun 2026
A.S. Computer Science & Data Science | GPA: 3.9 / 4.0 | Phi Theta Kappa — *Cupertino, CA*

Coursework: Data Structures & Algorithms, OOP in C++, Machine Learning, Probability & Statistics, Calculus, Linear Algebra

EXPERIENCE

UC Berkeley – Global Opportunity Lab (Prof. Joshua Blumenstock) — Sep 2026 – Present
Machine Learning Researcher (URAP) — *Berkeley, CA*

- Fine-tune YOLO and RF-DETR object detection models in PyTorch to identify informal transit networks from satellite imagery across developing-world cities
- Own end-to-end model iteration: dataset preparation and annotation review, training runs, and evaluation of detection performance against annotated ground truth

Wipro — Jul – Sep 2025
Software Engineer Intern • AI Engineering — *Bengaluru, India*

- Designed and implemented modular RAG and LLM pipeline architecture in Python and TypeScript; engineered data ingestion, chunking, and vector embedding layers to support scalable downstream inference
- Authored automated test suites to benchmark retrieval accuracy and model latency across pipeline iterations; shipped optimized components to Wipro Intelligence's Auto Cortex model for the cloud car platform

Stanford University – HAI — Feb – Apr 2025
Research Intern — *Stanford, CA*

- Collaborated with PhD researchers at Stanford's Human-Centered AI Institute on a formal evaluation framework for Facial Recognition Technology performance assessment across new deployment domains
- Implemented evaluation protocols in Python across demographic subgroups; applied statistical analysis to surface accuracy disparities and contributed findings to academic documentation

PROJECTS

SpaceMetrics — Soccer Computer Vision Analytics
Python, PyTorch (CUDA), YOLOv8 (Ultralytics), ByteTrack, OpenCV, scikit-learn • github.com/Kingshre/spacemetrics

- Fine-tuned a YOLOv8 detector on SoccerNet MOT tracking data (45 train / 12 validation sequences), reaching **mAP50 of 0.955** on player and referee detection
- Paired detection with a custom-tuned ByteTrack configuration (lowered confidence thresholds, extended track buffer), cutting identity fragmentation from **133 to 80 unique IDs** for ~25 on-pitch players; traced residual churn to detection recall gaps rather than tracker parameters
- Implemented OpenCV homography pitch calibration validated to **under 1m positional error**, plus jersey-color k-means team assignment, to compute zone-density analytics across pitch thirds

PitWall — F1 Strategy Intelligence Platform
Python, TypeScript, Next.js, FastAPI, D3.js, Supabase • pitwall-mocha-seven.vercel.app

- Architected a full-stack distributed system with a decoupled FastAPI backend and Next.js frontend; designed RESTful APIs consumed across five analytical modules with Supabase as the persistent data layer
- Implemented a Championship Engine using Elo rating updates (O(n log n) per race) and 50,000-run Monte Carlo simulations; built an NLP sentiment pipeline classifying driver radio transcripts at scale

From Raw to Ready — End-to-End ML Data Pipeline
Python, SQL, PostgreSQL, Docker • github.com/Kingshre/from-raw-to-ready

- Built a production-style ML data pipeline transforming raw transaction data into validated, versioned, model-ready features; implemented immutable raw ingestion storing each record as a JSON event for full replayability
- Engineered SQL-based rolling feature aggregations (7d/30d orders, revenue, recency) with time-aware train/val/test splits and a feature registry tracking configuration and SQL hashes for lineage

TECHNICAL SKILLS

Languages: Python, C++, Java, TypeScript, SQL, R, HTML/CSS

ML & Computer Vision: PyTorch, Ultralytics (YOLOv8), RF-DETR, ByteTrack, OpenCV, scikit-learn, NumPy, pandas, LangChain

Tools: FastAPI, PostgreSQL, Docker, Git, Linux/Unix

Competencies: Computer Vision, Object Detection & Tracking, Model Evaluation, ML Pipelines, Feature Engineering, Data Structures & Algorithms, REST APIs, Statistical Modeling