HARVA YEO

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EDUCATION

University of California San Diego (UCSD)

Master of Science (M.S) - Machine Learning & Data Science

Pune Institute of Computer Technology (PICT)

Bachelor of Engineering (B.E.) – Electronics & Telecommunication

WORK EXPERIENCE

Sep 2023 - Jun 2025 San Diego, USA

Aug 2019 – Jun 2023

Pune, India

Applied Data Scientist

Oualcomm Institute

Jul 2024 - Jun 2025

San Diego, USA

- Conducted a causal impact study using synthetic control and ARIMA time series forecasting to quantify a 23% rise in gambling-related risk post U.S. sports betting legalization; insights shaped policy recommendations and outreach.
- Built 'Waldo', an open-sourced LLM tool to flag adverse events in unstructured text; fine-tuned RoBERTa in PyTorch on 360K+ Reddit posts, built custom evaluation scripts for rare-class metrics and conducted failure mode analysis.

Research Scientist Dec 2022 - Aug 2023

Indian Institute of Technology (IIT) Patna

Remote

- Generated a 100K-image (30% increase) synthetic dataset using image augmentation, improving computer vision model robustness for occluded traffic sign detection in autonomous driving.
- Designed and evaluated a deep ensemble (ViT + EfficientNet), improving F1 score by 9% over experimental baselines and achieving over 85% precision on long-tail edge cases.

Senior Data Scientist, Ranking

Aug 2022 – Apr 2023

RhythmFlows Solutions Pvt. Ltd

Pune. India

- Devised a personalized context-aware music recommender for a mental-health app, curated 75 seed tracks collaborating with psychiatrists, mitigating cold-start; boosted NDCG@10 by 18% and hit-rate@5 by 14%
- Productionized the model on AWS Sagemaker at scale with continuous training and rollout. Designed an A/B test; treatment group showed a 33% increased click-through rate (CTR), and increased session duration by 20%.

Machine Learning Engineer

Jan 2022 - Jun 2022

Atomic Loops

Pune. India

- Spearheaded a team of three in building a YOLOv5-based real-time object detection model for for conveyor-based food delivery, achieving 98% detection precision and boosting footfall by 30%.
- Optimized real-time inference by aligning model latency with ops & hardware teams to, reducing false negatives by 15%; later reused for inventory tracking, reducing food waste by 5x.

PUBLICATIONS & CONTRIBUTIONS

- Authored a statstical investigation in JAMA Internal Medicine (acceptance rate: 4%) on gambling addiction trends.
- Led and authored a novel research study in IEEE Xplore (CVMI 2024) on occluded traffic sign detection.

TECHNICAL PROJECTS

BenchAgent | **@** LangChain, MCP, Optuna

- Automated an MCP-compliant LangChain agent that runs 3 dataset/metric pipelines end-to-end, logging 100% of LLM predictions and metrics to JSON/SOLite so GPT-40-mini, Claude 3 Haiku, and GGUF benchmarks stay reproducible.
- Launched a FastAPI-triggered Vite/React cockpit where users kick off agentic LLM evaluations in <30s and doubled experiment cadence by streaming label distributions plus confusion matrices immediately after each run.

MediSyn-Vision | **@** Diffusion, LoRA, dataset-creation

- Productized the diffusion-LoRA and StyleGAN2 pipeline into six CLI stages that automate data prep, training, sampling, evaluation, reporting, and demo launch for SynMedVision.
- Streamlined generation of 10K-image batches with manifest logging supporting tracking of KID and TSTR metrics.

TECHNICAL SKILLS

Programming - Python, PyTorch, SQL, C++, Java, TensorFlow, Pandas, NumPy, SciPy, scikit-learn

Data & Platforms - AWS (SageMaker, S3, EC2/ECR, Batch), Docker, Git/GitHub Actions, Spark, dbt, ETL

Science & Modeling - Search Ranking, LLMs, Computer Vision, Causal Inference & A/B testing

Visualization - Tableau, PowerBI, Plotly, Matplotlib, Dash

Other - Probability, Statistics, Agentic AI, Metric design, Failure analysis