Victor Sim

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EDUCATION

The University of Texas at Dallas — May 2027
Bachelor of Science in Computer Science
- Honors: NSF STEM Scholarship (Full Ride), Dean's List, President's List (Collin College)

EXPERIENCE

Research Intern — Nov 2024 – Aug 2025
OpenAI Research (Algoverse AI)
- Co-authored DCLIP paper (arXiv:2505.21549); boosted text-to-image retrieval precision by 29% on MSCOCO, maintaining 94% zero-shot accuracy via implementing cross-modal transformer distillation.
- Designed teacher-student framework that increased model performance 15-35% across three size tiers by using YOLO-based region extraction & bidirectional cross-attention, validated at CLVision conference.
- Reduced compute costs by 85% by optimizing training & inference pipelines to 67.5K samples (5% of web-scale) while maintaining benchmark accuracy.

Software Engineer Intern — Nov 2023 – Jun 2024
NASA Johnson Space Center
- Accelerated object detection by 40% (10s to 6s) in Search & Rescue operations by engineering WebRTC-based drone system, earning Top-3 placement in NASA Open-Source Challenge.
- Achieved 90% mAP & reduced false positives by 12% via training YOLOv8 on custom SAR image dataset.
- Automated 90% of data-ingest pipeline by Flask/React/Node & CI/CD nvidia server deployment (99.5% uptime).

Data Scientist Intern — Apr 2024 – Jun 2024
Frontier Communications
- Saved $120K annually by reducing unnecessary technician trips by 15% through predictive model with XGBoost.
- Analyzed 50K+ call/telemetry/network logs for pipeline to flag non-productive dispatches findings in PowerBI.
- Increased customer satisfaction (74% to 76%) via real-time model performance monitoring for stakeholder reports.

PROJECTS

AI-Powered Developer Burnout Prevention (HackRice) | *React, TypeScript, Convex* — Sept 2025 – Oct 2025
- Won Best Dev Tool & 2nd Place Computer Vision App (Warp, TwelveLabs) via building personal wellness monitor using TwelveLabs Pegasus API & Auth0 for real-time mood detection of 12+ metrics.
- Integrated 3 APIs (GitHub, Linear, WakaTime) to track productivity metrics across development workflows.

ML Plane Engine Emissions Forecast (Raytheon) | *Vite, Django, Node.js, PostgreSQL* — Jan 2025 – May 2025
- Developed emissions forecasting tools, processing ICAO data by trained Bagged Trees model achieving 90% accuracy.
- Deployed to Vercel by 5+ RESTful APIs & Docker containers with CI/CD for manufacturing risk mitigation.

AI Financial Risk Assessor (Goldman Sachs) | *FastAPI, React, LightGBM, Node.js* — Nov 2024 – Dec 2024
- Built ML platform for underbanked populations; implemented LightGBM model achieving 95% accuracy in loan default prediction.

LEADERSHIP

NSF STEM, ACM, & NASA STEM | *Transfer Officer, Team Leader, ROS2 Developer* — Aug 2023 – Present
- Led 4-person team to Top-3 NASA Challenge finish; mentored 3 junior members in ML deployment; 4x Hackathons (3x Winner).

TECHNICAL SKILLS

Languages: Python, C++, Java, JavaScript/TypeScript, Go, Swift, Kotlin, SQL, Bash, Shell
ML & Data: PyTorch, TensorFlow, Scikit-Learn, LightGBM, OpenCV, YOLO, Pandas, NumPy, feature engineering
Cloud & DevOps: AWS (S3, EC2), Azure, GCP, Docker, Kubernetes, CI/CD (GitHub Actions), MLOps pipelines
Web & APIs: React, Next.js, Node.js, Flask, FastAPI, Django, RESTful microservices, GraphQL
Databases & Tools: Git, Jira, Postman, Redis, MySQL, CUDA, ROS2, model monitoring, A/B testing, ETL pipelines
Certifications: CompTIA A+, Network+, Security+, Google IT Support