Victor Sim

US Citizen | vicalexsim@gmail.com | linkedin.com/in/victorasim/ | github.com/vicalexsim
vicalexsim.github.io/Website-Landing-Page | vercel.com/victor-sims-projects | Responsible, Time Efficient, Strategic

EDUCATION

The University of Texas at Dallas Dec 2025
Bachelor of Science, Computer Science.
Honors: Dean's List & President's List (Collin College), University Newspaper (bit.ly/NASANEWS), NSF STEM Scholarship (Full ride)

EXPERIENCE

OpenAI Research (Algoverse AI) Nov 2024 - Aug 2025
Research Intern

- Co-authored OpenAI **DCLIP (arXiv:2505.21549),** measuring **up to 29% relative improvements** in text-to-image retrieval on research benchmarks, maintaining **94% zero-shot accuracy** via cross-modal transformer distillation framework.
- Built **teacher-student learning framework** as measured by **15-35 percentage gains/improvements** across model sizes by implementing advanced vision techniques (YOLO, cross-attention) with PyTorch, **accepted into CLVison Conference**.
- Optimized **AI model performance** as measured by achieving **competitive benchmark results** using **only 67.5K training samples** versus typical web-scale datasets by demonstrating **efficient knowledge distillation** techniques.

NASA Johnson Space Center Nov 2023 - Jun 2024
Software Engineer Intern

- Engineered user-friendly, **object-detection drone system** for Open-Source National NASA challenge (**Top 3 team**), **reducing average detection delay (30%, 10 to 6 seconds)**, enhancing Search & Rescue (SAR) Operations (varied oceanic conditions).
- Implemented state-of-the-art, Python-Trained Computer Vision **YOLOv8 ML model** with image processing libraries (OpenCV, PyTorch, Scikit) & SAR dataset for precise, comprehensive **90% Accuracy predictions**.
- Integrated Flask RESTful API, React frontend, & Node.JS backend for **camera web interface**, including end-to-end data & ML pipelines with **90% automation & integration reliability** (NVIDIA server/client) (Agile Dev).

Frontier Communications Apr 2024 - Jun 2024
Data Scientist Intern

- Spearheaded a scalable **predictive analytics model** based on technician historic trends with Python libraries (SciKit-Learn, Pandas, Torch, NumPy), allowing **15% reductions in unnecessary technician dispatches**, improving operational efficiency.
- Analyzed large **(50,000+) datapoint sets** of customer calls, chatbot interactions, & telemetry/operational data to classify **non-productive dispatch patterns**, facilitating stakeholder communication of internal Celonis PowerBI Platform & Corpus.
- Conducted **unit testing protocols**, assessing AI model **metrics for improvement** (**Peak 90%** - Precision, Recall, F1) with real-time data dispatch adjustments that helped raise **customer satisfaction score (74->76%)**.

PROJECTS

AI-Powered Developer Burnout Prevention (Hackrice) (2x Wins)| React, TypeScript, Convex, Auth0, Tailwind Sept 2025 – Oct 2025

- Launched **wellness monitor** to **predict burnout risk** using TwelveLabs Pegasus API for **CV real-time mood detection** of webcam & **integrating 3 APIs** (GitHub/Linear/Wakatime), tracking **productivity metrics** (**Best Dev & 2nd place CV tool**).

ML Plane Engine Emissions Forecast App (Raytheon) (Capstone) | Vite, Django, NodeJS, Postgres, MatLab Jan 2025 - May 2025

- Crafted predictive analytics tools **visualizing aircraft gas emissions patterns** for **manufacturing risk mitigation**, enhancing data interpretation (ICAO corpus) using **Bagged Trees** model (**90% accuracy**) (CMake), **5+ RESTful APIs**, & **Docker containers**.

AI Financial Insights/Risk Assessor (Goldman) | FastAPI, React, Vite, Uvicorn, Tailwind, LightGBM, NodeJS Nov 2024 - Dec 2024

- Architected a Python **ML Financial Assessor Webapp** (Prophecy) for **HackUTD Challenge** with **key financial data visuals**, enabling secure & scalable AI financial prediction & assessment services for **underbanked populations (1 mil+ datapoints)**.
- Programmed a **LightGBM-based prediction model** leveraging Kaggle's Home Credit Default Risk dataset, achieving **high accuracy in predictions** of loan approval & default risk (**95% model accuracy**) based on user input.

Database Threat-Scope Security Platform | Docker, Python, Flask, MySQL, phpMyAdmin, PHP Sep 2024 - Oct 2024

- Prototyped full-stack **end-to-end** vulnerability scanning platform with automated **AI-powered risky code mitigation** achieving **85.6% recall rate**, real-time dashboard with **12+ metrics**, & instant security assessment across **100k+ PHP files**.
- Designed parsing pipeline via **10k+ training PHP files** (TF-IDF vectorization/taint analysis), achieving **prod-ready deployment**.

LEADERSHIP:

NSF STEM & NASA STEM (NSF STEM Transfer Student Officer & NASA Challenge Team Leader – UTD Charon) Aug 2023 - Present
Association of Computer Machinery (Nova Autonomous Vehicles (ROS2) & 4x Hackathon Participant – 3x win) Jan 2024 – Present

SKILLS

Programming Languages: Python, C++, C#, Java, HTML, CSS, JavaScript, Assembly, Swift, Kotlin, Shell, Typescript, HLSL, R, Go.
Frameworks & Tools: Next.js, Vite, Node.js, Express.js, 3.js, React, Flask, Bootstrap, Django, Convex, Linear, Postman, Jira, Azure, FastAPI, OpenCV, PyTorch, TensorFlow, Jupyter, Albumentations, PyAV, Anaconda, Cuda, Tokenizers, Transformers, YOLO, Pandas, Docker, Kubernetes, GCP, WebRTC, Websocket, Junit, Selenium, Scrum, Agile, Unity, Figma, Blender, Wireshark, Active Directory, ROS.
Certifications: CompTIA A+, Google IT Support, Network+, Security+