# 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

**Meta 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 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

- Developed **wellness monitor** to **predict burnout risk** using TwelveLabs Pegasus API for **real-time mood detection** of webcam analysis & **integrating 3 more APIs** (GitHub/Linear/Wakatime) to track **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

- Engineered predictive analytics web app visualizing **gas emissions patterns** for mitigation via dashboards, enhancing data interpretation (**90% accuracy**) (ICAO corpus) using **Bagged Trees** model, CMake, **5+ RESTful APIs**, & **Docker containers**.

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

- Developed 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)**.
- Implemented 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.

**Embedded Security Scripts (Toyota CTF)** | Python, Assembly, WireShark, Cryptography Sep 2024 - Oct 2024

- Engineered comprehensive **Python test scripts** to log, transmit, & analyzing CAN & UART **network protocol data of automotive hardware (ARM Cortex chip)**; directly contributing to the identification of problematic **30+ security vulnerabilities** in automotive systems for Toyota Tsusho Systems.

## LEADERSHIP:

**NSF STEM & NASA STEM** (NSF STEM Transfer Student Officer & NASA Challenge Team Leader – UTD Charon) Aug 2023 - Present
**Association of Computer Machinery** (Leetcode Bootcamp Student Peer & 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.
**Certifications**: CompTIA A+, Google IT Support, Network+, Security+