Trung Hoang Vu

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EDUCATION

California State Polytechnic University, Pomona — **Expected May 2026**
Computer Science M.S. — GPA: 4.0

University of California, Los Angeles — **Sep 2020 – Jun 2024**
Computer Science and Engineering B.S. — GPA: 3.6
Accolades: NSF REU, UPE National Scholarship 2023, Dean's Honor List (20F, 21S, 23W), UCLA Engineering Award in Student Welfare

SKILLS

- **Languages/Frameworks:** Python, C, C++, SQL, HTML, CSS, JavaScript, React, NodeJS, Verilog, Prolog, MATLAB, Java, Haskell, Bash
- **Software & Tools:** Splunk, Jupyter Notebook, Git, Linux, Confluence, Wireshark, Figma, VMware, MongoDB, Docker, LaTex
- **Soft Skills:** adaptive, curious, team player, self-starter, organized, communicative, leader, critical thinker

PROFESSIONAL EXPERIENCE

Sandia National Laboratories — **Cybersecurity R&D Intern** — **Jun 2023 – Present**
- Build Python scripts to aggregate IT/OT data using Splunk and RunZero APIs, enhancing data access for Sandia's cybersecurity team
- Revise and create 10 Splunk alerts and 5 lookup tables in Excel for IT/OT data, reducing flagged network activity noise by 60%
- Triage 10 network alerts daily by using Wireshark to analyze pcap files from Zeek, Suricata, Nozomi, and internal systems
- Design low fidelity wireframes for web dashboards in PowerPoint to summarize DHS and CISA client risk and visibility assessments
- Implement web dashboards containing risk and visibility data for CISA clients on Visual Studio Code using Flask, HTML, and CSS

UCLA Samueli School of Engineering — **Teaching Assistant** — **Sep 2021 – Jun 2024**
- Taught 150 students about C programming, STM32L4 microprocessors, and neural networks for UCLA Internet of Things course
- Developed 16 C programming assignments to build IoT motion detection functionality using accelerometer and gyroscope data
- Implemented dashboard to display IoT sensor data using C, JavaScript, HTML, and CSS with B-U585I-IOT02A IoT node as webserver
- Tutored 21 students in robotic control systems and MATLAB, guiding cybernetics project development in UCLA cybernetics course
- Documented and uploaded Windows/Mac setup guides and assignment solutions to GitHub using LaTex and Visual Studio Code

NASA Jet Propulsion Laboratory — **Data Science Intern** — **Jun 2022 – Aug 2022**
- Investigated temperature anomalies using Python to understand regional warming patterns with climate data from 1850 to 2022
- Developed deep neural network (DNN) using PyTorch to predict global and regional surface temperatures for the 21st century
- Benchmarked 65 CMIP6 climate projection models with RMSE and MSE using scikit-learn to rank models by historical accuracy
- Created ensemble and plotted future climate under 4 shared socio-economic pathways using Matplotlib and Jupyter Notebook

SISYPHUS Global Systems — **Software Development Intern** — **Mar 2021 – Aug 2021**
- Constructed green and grey infrastructure maps for New Orleans using ArcGIS API for JavaScript to enrich GIS database
- Enhanced web-portal and recommendation engine by integrating open-source IBM software and AI tools into system architecture
- Re-designed company website using HTML and CSS to clearly define company product and tech stack to better attract consumers

RESEARCH / TECHNICAL PROJECTS

Computer-Aided Drug Design Group — **Machine Learning Researcher** — **Aug 2024 – Present**
- Apply unsupervised machine learning using scikit-learn and DGL to predict compound structure changes and drug binding affinities
- Parallelize 7.5 million compound fingerprinting using Python joblib and multiprocessing library, reducing runtime from 45 to 3 min
- Benchmark and parallelize compound fingerprinting and clustering algorithms for scalability from 1 million to 1 billion compounds

Scalable Analytics Institute — **Machine Learning Researcher** — **Apr 2023 – Jun 2024**
- Created graph neural network (GNN) using PyTorch and DGL to uncover intrinsic patterns underlying protein sequence databases
- Pre-processed protein dataset by filtering, scaling, and one-hot-encoding amino acid biochemical properties using scikit-learn
- Performed data augmentation to balance 99%/1% unmodified/modified protein dataset, increasing prediction model performance
- Compared GNN to multilayer perceptron (MLP) using accuracy, recall, precision, and F1-score in Python, showing GNN's advantage

Bowling Bro — **Full-Stack Developer** — **Aug 2024 – Present**
- Develop full-stack web application using Flask, MongoDB, HTML, and CSS for tracking bowling scores and uploading on leaderboard
- Implement OCR with PyTesseract and OpenCV in Python to extract and process bowling scores from IMG, JPG, PNG, HEIC images
- Design low- and high-fidelity wireframes of web application using Figma to visualize website structure and optimize UI and UX

PUBLICATIONS, CERTIFICATIONS, AWARDS

- 21st Century Global and Regional Surface Temperature Projections | doi.org/10.1029/2022EA002662 — Dec 2022
- UCLA Extension Technical Management Program — Sep 2023
- MIT Climate Tech & Energy, IBM Call for Code Global Challenge (regional finalist), IBM AI Spot Challenge (2nd), IBM Code Engine Hackathon (2nd), Howard Hackathon for Environmental Justice (2nd)