Trung Hoang Vu

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EDUCATION

California State Polytechnic University, Pomona (Cal Poly Pomona) — Expected May 2026
Computer Science M.S. — GPA: N/A

University of California, Los Angeles (UCLA) — 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), Engineering Award in Student Welfare

SKILLS

- **Languages/Frameworks:** Python, C/C++, SQL, Verilog, Prolog, React, JavaScript, HTML, CSS, MATLAB, Java, Haskell, Bash, NodeJS
- **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 – Aug 2023, Jun 2024 – 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 for IT/OT data, reducing flagged non-malicious network activity by 60%
- Investigate IP addr and pcap files with Wireshark to triage 10 network alerts daily from Nozomi, Suricata, Zeek, and Sandia systems
- Design web dashboards in PowerPoint to summarize client risk and visibility assessments, improving decision-making efficiency
- Implement and populate web dashboards designs with client specific data using HTML and CSS for clients and developers to use

UCLA Samueli School of Engineering — Teaching Assistant — Sep 2021 – Jun 2024
- Taught over 150 students about C programming, STM32L4 microprocessors, machine learning to guide development of IoT motion detection functionality using accelerometer and gyroscope data in UCLA's ENGR 96i: internet of things course
- Developed, tested, and integrated 8 new modules and projects using B-U585I-IOT02A IoT Node and C into IoT course
- Tutored 21 students in robotic control systems and MATLAB, guiding cybernetics project development in ENGR 96c: cybernetics
- Built comprehensive course guidebook on GitHub providing solutions and hints that supported new instructor and 5 group tutors

NASA Jet Propulsion Laboratory — Data Science Intern — Jun 2022 – Aug 2022
- Investigated surface temperature anomalies using Python to enrich comprehension of global and regional warming patterns by leveraging CMIP6 and Berkeley Earth climate data from 1850 to 2022
- Created deep neural network (DNN) using PyTorch to predict surface global and regional surface temperatures for the 21st century
- Analyzed test data from 65 climate projection models to historical climate data to rank CMIP6 models by historical accuracy
- Constructed ensemble using 16 best CMIP6 models to accurately simulate future climate under 4 shared socio-economic pathways

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 and disaster risk and mitigation method calculations
- Enhanced web-portal and recommendation engine by integrating open-source IBM software into system architecture
- Re-designed company website using HTML and CSS to clearly define company product and tech stack to better attract consumers
- Managed and maintained company code-base on GitHub using Git version control

RESEARCH / TECHNICAL PROJECTS

Scalable Analytics Institute — Machine Learning Researcher — Apr 2023 – Present
- Create graph neural network (GNN) using PyTorch and DGL to uncover intrinsic patterns underlying unlabeled protein sequence databases to assist UC Berkeley Toste Laboratory in advanced property modeling
- Pre-process raw protein data by filtering, scaling, and encoding amino acid biochemical properties to feed into GNN using Python
- Perform data augmentation to balance 99%/1% unmodified/modified protein dataset and increase prediction model performance
- Compare GNN performance to multilayer perceptron using test data to show GNN's advantage on protein modification prediction

Bowling Bro — Full-Stack Developer — Jul 2024 – Present
- Develop full-stack application in Python using Flask that enables users to upload and share bowling scores on a public leaderboard
- Implement OCR with PyTesseract to extract and process bowling scores from uploaded images, enhancing user convenience
- Design and manage backend infrastructure for efficient data handling and real-time updates of score submissions and leaderboard

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)