

Trung Hoang Vu

trunghvu.com • github.com/thvu02 • linkedin.com/in/thvu02 • trungvu@cpp.edu • active Q clearance



SUMMARY

Computer Science M.S. student at California State Polytechnic University, Pomona and Computer Science and Engineering B.S. graduate from UCLA. Have 4 summers of industry experience in SWE, data science, and cybersecurity at NASA JPL, Sandia National Laboratories, and startups. Demonstrated self-starter, team player, and open-minded, independent thinker through TA, research, and club leadership positions. Interested in pursuing SWE, cybersecurity, and AI/ML roles.

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, Ubuntu, RunZero, 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

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

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-U5851-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

TECHNICAL PROJECTS

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

Personal Website	Full-Stack Developer	Aug 2023 – Present
<ul style="list-style-type: none"> Leveraged open-source template to develop and host personal website using Hugo, TailwindCSS, and GitHub Pages Modified HTML and TOML files to create additional buttons and eliminate redundant features to simplify user interface Experimented with various color palettes and website layouts using CSS and SCSS to improve user experience Create and populate MD files with data to display on webpages using tables, accordions, and custom developed HTML layouts 		
Let's Ergo	FPGA Engineer	Apr 2024 – Jun 2024
<ul style="list-style-type: none"> Implemented fall detection and ergonomic system by programming Digikey BASYS-3 FPGA running Microblaze processor in C Leveraged BASYS-3 FPGA seven segment display and switches to implement display and mode switching functionality Integrated accelerometer and gyroscope PMOD on BASYS-3 FPGA to achieve motion detection functionality Developed Python script that reads from FPGA through serial port to open web browser on laptop on command 		
Pong!	FPGA Engineer	Apr 2023 – Jun 2023
<ul style="list-style-type: none"> Collaborated with 2 team members to implement Pong game on DE10-Lite FPGA using Verilog Developed incrementally increasing ball acceleration functionality and properly displayed game on VGA monitor Calibrated RGB colors using Verilog to implement color-changing ball Implement button debouncing to suppress bouncing in switches using Verilog by leveraging different clock frequencies 		
Uniqueness Test	Frontend Developer	Mar 2023 – May 2023
<ul style="list-style-type: none"> Implemented web-based questionnaire using React to determine the uniqueness of an individual that was used by 175 students Modified and extended codebase to create navigation tab directing users to different versions of Uniqueness Test Developed CSS code to have Uniqueness Test's color-palette match the themes of the student programs it was designed for Hosted Uniqueness Test online using gh-pages npm package to build and deploy React app to GitHub Pages 		
Digital Audio Visualizer	FPGA Engineer	Oct 2021 – Jun 2022
<ul style="list-style-type: none"> Created system to visualize frequencies of audio signals on VGA monitor using SystemVerilog and DE10-LITE FPGA Programmed Flappy Bird video game where users control bird movement using programmed DE10-LITE FPGA buttons Implemented test benches using SystemVerilog on Intel QuartusPrime to simulate and examine program behavior 		
Wordle PLUS	Full-Stack Developer	Feb 2022 – Mar 2022
<ul style="list-style-type: none"> Led 4 developers to program full-stack web-app using MERN stack where users guess a five-letter word in six attempts Implemented score-based leaderboard page that dynamically displays server-side player data by connecting backend to MongoDB Utilized React to modify and extend existing codebase, supporting option to play Wordle PLUS with four- or six-letter words Developed Python script to extract 4, 5, and 6 letter words from online dictionaries and generate word bank of 50,000 words 		
Fitness Form Correction Tool	IoT Engineer	Jan 2021 – Mar 2021
<ul style="list-style-type: none"> Developed IoT system that tracks body movement to ensure proper exercise executing using C, Embedded ML Neural Network, and STM32L4 microprocessor on STMicroelectronics SensorTile Implemented 2-state motion analysis using C to determine exercise motion correction based on accelerometer and gyroscope data Tested and evaluated optimal acceleration and rotation thresholds to accurately classify correct motion patterns 		

NON-TECHNICAL EXPERIENCE

UCLA Extension	Instructor Aide	Sep 2023 – Sep 2023
<ul style="list-style-type: none"> Assisted Technical Management Program instructors facilitate leadership and management workshops for 130 managers Mediated and successfully resolved team conflict by facilitating open communication, active listening, and compromise among team members, leading to improved collaboration and a more harmonious work environment Ensured smooth program operations by maintaining office supplies, managing inventory, and ordering maintenance repairs 		
VentureWell	Entrepreneur	Jun 2021 – Sep 2021
<ul style="list-style-type: none"> Identified viability of flood damage mitigation product by interviewing 34 urban planning and engineering professionals Determined value chain, performed competitive analysis, and identified product-market fit for flood damage mitigation product Developed entrepreneurial skills by collaborating with Verizon staff to refine technology stack and marketing strategies Organized and presented product pitch for SISYPHUS Global Systems that won against 12 candidate startups 		

EXTRACURRICULARS

Upsilon Pi Epsilon, the Computer Science Honors Society	External Vice President	Feb 2023 – Jun 2024
<ul style="list-style-type: none"> Collaborated with UCLA, tech companies, and campus clubs to organize over 20 events and resources for over 2000 students Supervised 70 officers, providing support and resources to ensure duties and deadlines are met within \$23,000 budget Successfully recruited Jane Street and DRW into affiliate program, and liaison between all affiliates and UCLA CS Department Tutored UCLA undergraduate students in C++ programming by breaking down complex topics and tracing code examples 		
	Entrepreneurship Chair	Apr 2022 – Feb 2023
<ul style="list-style-type: none"> Collaborated with committee to organize Hot Ones panel, connecting UCLA alumni entrepreneurs with over 200 UCLA students Led team of 3 to organize game night, providing 20 UCLA students networking opportunities with entrepreneurs in the LA area 		

- Tutored UCLA undergraduate students in C++ programming by breaking down complex topics and tracing code examples
- Entrepreneurship Intern** **Sep 2021 – Apr 2022**
- Organized product pitch competition and entrepreneurship workshops with ACM and Bruin Entrepreneurs to UCLA students
 - Collaborated with Bruin Entrepreneurs club to create competitive analysis workshop and guidelines for product pitch competition
 - Tutored UCLA undergraduate students in C++ programming by breaking down complex topics and tracing code examples

Vietnamese Student Union

Fiscal Committee Member **Sep 2023 – Jan 2024**

- Managed Pos and delegated funds for supply and material purchases to ensure 11 committee operate within allocated budget
- Negotiated with UCLA funding bodies and organize fundraisers to raise over \$50,000 for annual Vietnamese Culture Night (VCN)
- Documented all payments and reimbursements related to VCN, ensuring balances are paid and account balance stays positive

Traditional Dance Member **Oct 2022 – Apr 2024**

- Collaborated with team members to learn traditional dance choreography by attending weekly, 6 hours practice sessions
- Performed traditional Vietnamese dance choreography for over 1800 attendees at annual culture night and other campus events

Southeast Asian Campus Learning Education and Retention

Peer Mentor **Oct 2022 – Present**

- Provide academic and career guidance to 6 transfer students, ensuring their seamless transition and success from CC to UCLA
- Facilitate mock interviews and resume reviews with 8 engineering students, helping them obtain internship and research roles
- Guide 4 UCLA students on pursuing computer science careers by offering course recommendations and online resources

Fiscal Coordinator **Jan 2024 – Jun 2024**

- Developed comprehensive grant proposals to secure \$27,000 and \$14,000 from UCLA funding bodies to finance high school and transfer admit programs
- Compiled provisional budget sheets on Excel by analyzing historical program spending data to determine requisite funding
- Facilitated reimbursement requests through UCLA funding bodies and external funding sources for over 150 students
- Issued purchase orders ranging from several hundred to thousands of dollars with local food and clothing vendors

Workshop Facilitator **Oct 2022 – Oct 2023**

- Organized and presented 5 college prep workshops to 175 Southeast Asian high school students and prospective UCLA students
- Educated 175 students on mental health and impact of data aggregation on Southeast Asian populations by facilitating team discussions and interactive activities

PUBLICATIONS

- 21st Century Global and Regional Surface Temperature Projections | doi.org/10.1029/2022EA002662 Dec 2022

CERTIFICATIONS

- UCLA Extension Technical Management Program Sep 2023

HONORS AND AWARDS

- Engineering Award in Student Welfare Jun 2024
- UPE National Scholarship Dec 2023
- Computer Science Wang NSF REU May 2023
- MIT Climate Tech & Energy Prize Feb 2022
- IBM Call for Code Global Challenge | *regional finalist* Oct 2021
- Verizon & CGI U Social Innovation Challenge | *1st place* Sep 2021
- IBM AI Spot Challenge | *2nd place* Aug 2021
- IBM Code Engine Hackathon | *2nd place* Jul 2021
- Howard Hackathon for Environmental Justice | *2nd place* Apr 2021
- Dean's Honors List 20F, 21S, 23W