Timothy Do's Official CV

An A.I. Machine Vision Enthusiast & DSP Techie to Make the World A Better Place

EDUCATION

University of California Irvine, Irvine, CA — *B.S. Electrical Engineering*

September 2019 - June 2023 (Expected)

- 4th Year Undergraduate, Accelerated Status
- Overall GPA: 3.912, Major GPA: 3.924
- **Specialization**: Digital Signal Processing
- **Research Interests:** Digital Signal Processing with Artificial Intelligence, Digital Image Processing, Machine Vision
- **Relevant Coursework:**
    - **EECS 22/22L: Advanced C Programming**, learned about advanced data structures and program decomposition. Developed a network chess application in C with a team of 4.
    - **EECS 50/150: Discrete-Time/Continuous Signals and Systems,** learned about LTI Systems, Z-Transforms, the DTFT, FFT, Anti-Aliasing, Laplace Transform
    - **EECS 152A/B: Digital Signal Processing**, learned about the Fourier Transform, Sampling, Filter Design. Applied to Image Compression, SVM Classification, Adaptive Noise Canceling.
    - **EECS 160/160LA: Introduction to Control Systems,** learned about Feedback Systems, Routh Criterion, Root Locus, and Frequency Response design
    - **EECS 170A/B/C: Electronics**, learned about semiconductor properties, diodes, BJT, and MOSFET transistors and their applications through amplifiers and digital logic.
    - **EECS 203A: Digital Image Processing,** learned about Image transforms, 2D Fourier Transform, MATLAB processing.
- **Major Coursework** for Winter 2023: EECS 159B (Senior Design Project), EECS 101 (Machine Vision), EECS 221 (Lang. and Compiler for Hardware Accelerators), EECS 141A (Communication Systems)
- **Clubs and Societies:** Irvine Computer Vision Laboratory, IEEE-HKN (Eta Kappa Nu), Institute of Printed Circuits, Tau Beta Pi
- **Awards:** Dean's Honor List (GPA 3.5+) for 9 Quarters (Fall 2019, Winter 2020, Spring 2020, Fall 2020, Winter 2021, Spring 2021, Fall 2021, Winter 2022, Spring 2022)

Evergreen Valley High School, San Jose, CA — *Diploma*

August 2015 - May 2019

- GPA: Unweighted: 3.8, Weighted: 4.0
- **Relevant Coursework**: AP Physics C: Mechanics (4), AP Computer Science A (4), AP Statistics (4), AP Calculus AB (5), AP US History (4), Math 072 (Calc II) @ Evergreen Valley College
- **Awards:** EVHS Band Scholar, Magna Cum Laude, Golden State Diploma, Bilingual Certification in Vietnamese, AP Scholar with Distinction

CONTACT

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☞ Linkedin (/in/do-timothy)

🖥 Github (dotimothy)

https://timothydo.me

SKILLS

Computers:
Assembled/Debugged Desktop Hardware and OS installations.

Electronics:
Soldered Circuits and Designed Components on Oscilloscopes, Power Supplies, Function Generator and Multimeter.

Embedded System Programming:
Programmed with C, Java, and Python libraries by creating IoT projects on Arduino/Raspberry Pis

Image Processing & Machine Learning:
Programmed GPUs to do Image Processing in MATLAB & Tensorflow AI

Web Socket Programming:
Created Websites with HTML, CSS, and Javascript in addition to TCP socket programming using Python.

HACKATHONS

Cisco Webex Hackathon 2021
Gratition: An Easing Mental Health Web App (with Google Voice Synthesis)
Languages: HTML/CSS/JS

ZotHacks 2021
Anteatings: A Fun JS-Based Antsmashing Game on the Web
Languages: HTML/CSS/JS

EXPERIENCE

Western Digital, San Jose, CA - *Industrial IOT Intern*
June 2022 - September 2022
- **Skills:** MySQL, Python, Raspberry Pi, Soldering, Linux, Lean Six Sigma
- Certified as a Six Sigma Yellow Belt for learning Six Sigma foundations.
- Developed Presentation Skills in a Corporate Environment.
- Learned Industrial Tool Sets for Circuit Design and Embedded System Programming.

UC Irvine, Irvine, CA - Student Researcher
January 2022 - Present
- Assisted in research under the direction of Professor Glenn Healey on the topic of Spectral Image Filtering for Emissions on Wildfires
- Digitized Imaging Filters into CSVs and compared them in MATLAB against certain chemical emissions.
- Generated altitude maps using QGIS & SRTM 1 Arc-Second Global

IPC Club @ UCI, Irvine, CA - *Vice President*
November 2021 - Present
- Reserved club meeting rooms and sent weekly emails to club members regarding club events
- Programmed the club website and managed social media (i.e. moderator of club discord server)
- Led a Two-Part AM Radio Workshop where I had to design the circuit for the best amplifier gain in addition to creating easy-to-read slides & ordering parts from Amazon/Dollar Tree.

Boy Scouts of America, San Jose, CA - *Merit Badge Counselor*
July 2021 - Present
- Offered to teach five Merit Badge Courses: Programming, Music, and Bugling, Electronics, and Digital Technology.

UC Irvine D.C.E., Irvine, CA - *I.T. General Assistant*
July 2021 - June 2022
- Helped Set-Up Desktops, Docks, Webcams, and Computers for over 300+ Employees in UCI's Division of Continuing Education

Environmental Injustice, San Jose, CA - *Collaborator*
June 2020 - September 2020
- Developed techniques such as stakeholder analysis, using Civic Data Tools such as CalEnviroScreen , and citing in Chicago format.

Evergreen Music Mentors, San Jose, CA - *Founding President*
September 2018 - September 2021
- Lead music tutoring sessions for younger middle school students
- Integrated software (Cybernotes) as a video calling platform

Most Holy Trinity Parish, San Jose, CA - *Teacher's Assistant*
October 2017 - May 2019
- Helped young students in their religious studies in Catholicism and their skills in Vietnamese.

Boy Scouts of America Troop 610, San Jose, CA - *Eagle Scout*
September 2013 - September 2019
- Awarded the Bronze Palm: Earning 5+ additional Merit Badges over the 21 required for Eagle Scout.
- **Eagle Scout Project**: Constructing 2 Food Cabinets for the Milpitas Food Bank

PUBLICATIONS

Timothy Do; Matthew Prata; Jorge Radge; Alex Wang. 2022. Colorization Utilizing Unsupervised Methods.UCI EECS 195, Network Science. UCI Henry Samueli School of Engineering. University of California, Irvine.

Tahis Alcantar; **Timothy Do**; April Godinez; Daniel Jilani; Vicent Marin; Wonhee Lee; Haoyang Liu; Huiqi Mai; Andrew Ramirez; Jiaqi Wu; Depei Xu. 2020. Fast Disaster Case Study: Santa Fe Springs. UCI Anthropology 25A, Environmental Injustice. Disaster STS Network. University of California, Irvine.

Tahis Alcantar; **Timothy Do;** April Godinez; Daniel Jilani; Vicent Marin; Wonhee Lee; Haoyang Liu; Huiqi Mai; Andrew Ramirez; Jiaqi Wu; Depei Xu. 2020. Slow Disaster: Case Study: Wilmington. UCI Anthropology 25A, Environmental Injustice. Disaster STS Network. University of California, Irvine.

Tahis Alcantar; **Timothy Do**; April Godinez; Daniel Jilani; Vicent Marin; Wonhee Lee; Haoyang Liu; Huiqi Mai; Andrew Ramirez; Jiaqi Wu; Depei Xu. 2020. Combo Disaster Case Study: San Bernardino County. UCI Anthropology 25A, Environmental Injustice. Disaster STS Network. University of California Irvine

LANGUAGES
English (Fluent), **Vietnamese** (Fluent), & **Spanish** (Proficient)

PROJECTS

[PhotoLab](#) - *An Image Processing Engine*
August 2022
- **Languages Used**: C, Javascript, Python, MATLAB
- Implemented diverse image processing engines in Javascript (Web), C (IoT), and Python/MATLAB (AI)
- Programmed aFlask Web Server for Cloud-Based Image Processing
- Piped with HTTP Post Requests to send images, MATLAB to perform operation, then send images back with HTTP GET.
- Performs image operations like sharpen, smoothing, FFT.

[TTLZNetChess](#) - *An Advanced Client-Based Chess Application*
March 2021 - June 2021
- Managed a team of four developers into develop a C-Based Chess Application for EECS22L (Intro to Software Engineering)
- Implemented Terminal Graphics (Colors) using Escape Codes
- Implemented AIs in Chess using Minimax Algorithm
- Networking Support using standard sockets and FCFS Protocol

[RefreshVideos](#) — *A High Refresh Rate Video Player*
April 2020 - Present
- **Languages Used**: HTML / CSS / Javascript
- Used Canvas to play videos at high frame rates and apply effects
- Featuring filters like Edge Detection, Aging, etc.

[pdDSP](#) — *Audio-Processing using Pure-Data*
March 2020
- **Languages Used**: Pure Data
- Used Pure Data to mix audio and designed audio filters (e.g. Low Pass Filter, Band Pass Filter)

[PiFmMorse](#) — *A Morse Code FM Transmitter for the Raspberry Pi*
September 2020
- **Languages Used**: Python
- An Program to transmit Morse Code over FM radio via GPIO 4
- Learned to concatenate .wav files via wave library
- Learned to call linux commands using os library

[RPiMorse](#) — *A Morse Code LED Circuit for the Raspberry Pi*
September 2020
- **Languages Used**: Python
- An Program to flash an LED in Morse Code given a circuit
- Learned GPIO Pins Wiring and its respective python library

[SCU Complex Fires](#) — *A Website Providing Wildfire Resources*
August 2020 - September 2020
- **Languages Used**: HTML / CSS/ Javascript
- Provided Wildfire resources for research, shelter, and news
- Worked with a team of 4 and remotely collaborated through Github
- Features an Energy-Efficient Dark Mode