

Karl Ventayen

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Education

California State University, Chico

Chico, California

Bachelor of Science: Computer Engineering, *Minor: Computer Science*

May 2025

Skills

Languages: C, C++, Python, SystemVerilog, MATLAB, Jupyter Notebook, LaTeX, Markdown, R, R Markdown, HTML
Software: Vim, Atom, Microsoft Visual Studio Code, MPLAB X IDE, MPLAB X IPE, Keil, KiCad, Autodesk Eagle, Git, GitHub, Vidado, LTSpice, Bantam Tools, Inventor, Fusion 360, SolidWorks, OrCad, Rstudio, Microsoft Office (Microsoft Word, Microsoft Excel, Microsoft Powerpoint)

Certifications

Fundamentals of Accelerated Computing C/C++: Insitution: Nvidia Deep Learning Institute, Instruction by Dr. Reza Khani (December 2023)

Collaborative Institutional Training Initiative (CITI Program): Responsible Conduct of Research: Insitution: California State University, Monterey Bay (June 2024)

Employment

- **California State University, Monterey Bay - Monterey Bay Aquarium Research Institute** Monterey, California
Intern (Coastal Profiling Float Development) May 2024 - August 2024
 - **Designed Hardware:** Designed the software on the STM32 Microcontroller for development Coastal Profiling Float
 - **Hardware Development:** Designed a wire harness to interface the STM32 Microcontroller to a PC through serial
 - **Embedded Systems:** Developed an embedded system to be able to handle commands through Bluetooth and Iridium
 - **Testing:** Thoroughly tested code using VisualGDB to ensure robustness against corrupted transmissions
 - **Presentation:** Presented findings at an MBARI Seminar and CSUMB UROC Presentations: <https://vimeo.com/1001218018>
- **Electrical and Computer Engineering Department, California State University, Chico** Chico, California
Lab Assistant March 2024 - May 2024
 - **Teach Embedded Systems Concepts:** Assited in the enrichment of the design of embedded systems and development
 - **Grade Papers:** Aided in correcting student assignments
- **Code for Care** Bakersfield, California
Lead Product Designer March 2018 - Present
 - **Product Development:** Researched and Drafted bottle designs for the product needs
 - **Marketing Assets:** Designed promotional material to express company values and interests
 - **Researched Audience:** Researched audience and competition to understand the market

Experience

- **IEEE Chico State Student Branch** Chico, California
Vice President — Secretary — Marketing Officer August 2020 - Present
 - **Collabrated with Club Members:** Coordinated club events with other members to ensure it runs smoothly
 - **Managed the Club:** Worked to organize the club activities and events
 - **Manage Part Sales:** Coordinated with other members of the IEEE to sell parts for department classes
 - **Coordinated Events:** Worked closely with the president to ensure that details such as room reservations and attendee count are accounted for
 - **Webmaster:** Managed the official website for the Chico State IEEE using the Wordpress interface

Projects

- **Personal Cloud Storage (Independent Project):** August 2024 - Present
 - Developed a drive that is accessible through the local network
 - Worked with the Raspberry Pi 3 and SanDisk USB Drive
 - Connected services with NextCloud on the Raspbian operating system
- **Vivado Download Documentation (Class Documentation):** August 2023 - October 2023
 - Created documentation is for Computer Architecture as a tutorial to download Vivado on the Ubuntu Operating System
 - Coordinated with peers to review work and ensure that the material could be read by other student of technical backgrounds
 - Documentation for this project was completed using Markdown on Notion
 - Created documentation in coordination with Dr. Reza Khani
- **Micro Controller PCB Board (Independent Project):** March 2022 - May 2023
 - KiCad was used for hardware development
 - Initial hardware development was on a Double Sided FR-1 Board using a PCB Mill
 - Further development will use third party services for PCB Fabrication
 - Programming and analysis of the Microcontroller used MPLAB X IDE and MPLAB X IPE and interface using the PicKit 3 debugger