Hugo Baca

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Education

B.S. Computer Engineering, C.S.U. San Bernardino, Expected December 2023
Accredited by *ABET - Accreditation Board for Engineering and Technology*
Relevant Coursework: **Data Structures & Algorithms (*C*++)**, **Digital Logic** (*Verilog*),
Machine Learning (*Python*), **Analog Circuit Systems and Design** (*MIPS, Assembly, PSPICE*)
Operating Systems (*xv6*)**, Robotics** (*Arduino*)**,** and **Embedded Systems** (*freeRTOS*).

Experience

Undergraduate Research Fellow, Google, University of California Riverside, Fall 2023
- Responsible for research, development, and documentation of applied machine learning models in the field of transportation. *August 1st - October 13th.*

Data Science Research Fellow, Optum Health (UHG), Carnegie Mellon, Summer 2023
- Undergraduate Data Science Research Fellow in the 2023 UnitedHealth Group - Optum, & Carnegie Mellon Bridges to Healthcare Technology Summer Research Program, a 10-week intensive data science research program to enhance problem-solving skills for healthcare-specific problems. *June 1st - July 31st.*
- Through the Department of Statistics & Data Science at Carnegie Mellon University, create unique solutions to improve through analytics analysis, statistical graphics & visualization, data engineering, data mining, and machine learning.

Software Engineer Intern, State of California Dept. of Transportation, May 2022 - Present
- Maintained a web application & software program used for traffic incident management, dispatch services, and data collection throughout District 8: Riverside and San Bernardino Counties.
- Programmed using Linux (Ubuntu), Apache, MySQL, Python (Django), Javascript, and C++.
- Responsible for automated traffic data report, expansion of data tracking, and developing quantitative solutions utilizing reportLab, pandas, matplotlib, and numpy.
- Optimized utilization of Google Maps' Geo-coding & JavaScript API resulted in a 25% performance increase as measured by Google Cloud's median latency.

Application Engineer Intern, Ketiv Technologies, May 2022 - December 2022
- Designed and modeled 3D parts and assemblies using Autodesk Inventor.
- Programmed automation solutions using Autodesk Inventor API, Microsoft Excel API, iLogic, and Microsoft VB.net.
- Created addons for customer-specific needs using forms, custom GUI, and more.

Student Mentor, C.S.U. San Bernardino, February 2022 - May 2022
- Under the STEM Center, increased the retention of STEM students, raised awareness of the STEM community, and networked with campus leaders.
- Strengthened and improved students' access to technology assistance, academic guidance, STEM-focused career opportunities, and facilitate solutions for non-academic problems such as healthcare, food insecurity, and wellness.

Marketing Student Assistant, C.S.U. San Bernardino, Sep. 2019 - April 2021
- Developed 6 social media accounts that resulted in 2,000 followers and Engaged with Microsoft, Twitter, and Google over social media.
- Leverage software insights, data, and analytics such as Meta business suite, Instagram creator insights, and TikTok for business.
- Implemented Web Content Accessibility Guidelines 2.1 and Americans with Disabilities Act throughout media sources.

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Housing Administrative Assistant, C.S.U. San Bernardino 2019 June - 2019 Sep.
- ● Coordinated housing plans for the Department of Housing and Residential Education in order to move in over 250 students.
- ● Provide a temporary housing program(CFS) for over 120 incoming freshmen.
- ● Evaluated maintenance needs, housing safety and security.

Projects
- ● *Cryptocurrency Tracker* - Developed a Python app using *Coinbase's API* that returned the top 5 valued crypto coins by market cap and updated every 5 minutes with pairing to the USD.
- ● **Southern California Housing Market Model** - Machine learning linear regression model applied to data from Kaggle on USA housing data with the Scikit-learn library.
- ● **Twitter Bot** - Using Twitter's API and Python, I created a stream of incoming updates, identified new followers, captured screen names, and sent out a scripted message.
- ● **3D Printed Accessibility Maps-** Designed and printed 3D maps used as guides for students with disabilities and more. (https://youtu.be/2iz3jh7lTGk 31:00)
- ● **Autonomous Sonar Vehicle -** Engineered an obstacle avoidance system, an auto navigation algorithm, and 4 additional functionalities using Arduino, a sonar sensor, and other electronics. LinkedInPost: Video Demo
- ● **Geographic Location Advertising App** - Developed a Swift (IOS) based app that gathers a user's location, provides nearby event information, and coupons, and assists in locating retailers.
- ● **Arduino Sensors, Signals, Electronics, and Systems Projects -** Designed circuits and developed software implementation for several hardware units such as photo interrupt, digital temperature sensor, rotary encoder, microphone sensor, joystick PS2, photo-resistor, RGB LEDs (SMD, DIP), servo, stepper motor, DC gear motor, analog sonar module, and more.

Skills & Certifications
- ● Bi-Lingual: Spanish.
- ● California Department of Justice - Criminal Justice Information Systems Security Certified
- ● ***EIT / FE Electrical Engineering Expected October 2023***

Organizations & Extracurriculars
- ● IEEE: Institute of Electrical and Electronics Engineers
- ● Computer Science and Engineering Club
- ● Entrepreneurship Club
  - 2022 CSUSB Innovation Challenge: Graduate Category - 3rd Place Winner
- ● SACNAS: Society for the Advancement of Chicanos/Hispanics and Native Americans in Science
- ● Society of Hispanic Professional Engineers
- ● Society of Latino Engineers and Scientists
- ● Department of Mathematics, Louis Stokes Alliance for Minority Participation Program (National Science Foundation)
- ● Educational Opportunity Program (EOP)