# BERNIE CONRAD

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## WORK EXPERIENCE

### Allthenticate
*Lead Software Engineer*

March 2020 - Present

- Ran the company's core software team, developed the passwordless desktop software and keyless smart door firmware implemented in Python, and a team focused on integrating the FIDO standard into our single-device authentication protocol.
- Integrated our desktop solution with Windows Credential Management and Pluggable Authentication Modules on Linux and macOS in Rust and C++ for seamless passwordless logins for desktop users.
- Created a new BLE communication model which enabled multiple users to securely interact with their computers and doors, significantly reducing their latency and improving reliability.
- Implemented remote logging, over-the-air commands, and automated schedules and health checks using WebSockets, MySQL, and MongoDB for monitoring and managing physical access control.
- Found and fixed CVE 2021-43400, a use after free of a function pointer in the Linux Bluetooth Stack during the development of ABle.
- Designed and implemented CI/CD pipelines on Gitlab for multiple projects with unit and integration tests, packaging with Codesigning, validation with Docker and Virtual Machines, and deployment.
- Managed relationships with strategic partners to improve our developer experience and reduce friction with our development and distribution processes.

### UCSB Crew
*Assistant Novice Coach*

2022 - Present

### Tanner Robotics
*Robotics Engineering Intern*

Summer 2019

- Played a pivotal role in the software and hardware development of phase II of a DOA contract (SBIR 2018-33610-28229) for an autonomous pallet stacking robot.
- Created a vision pipeline using Tensorflow and TensorRT on the Nvidia Jetson platform and optimized the robot's control software to be 34% faster using threads in C.

### SafeInHome
*Software Engineering Intern*

2017 - 2019

## EDUCATION

### University of California, Santa Barbara
*Bachelor of Science Computer Science*

2019 - 2022

Distinction in the major • College of Engineering Honors • Coursework in operating systems, deep and machine learning, embedded systems, networking, algorithms, data structures, and technology management and strategy • Varsity Mens Rowing

## PROJECTS

### Allthenticate Bluetooth Low Energy (ABle)

 pypi.org/project/able

Implemented a high-performance asynchronous platform agnostic BLE Python Framework used in Allthenticate's core software stack, providing a simple yet powerful Berkeley Socket API abstraction around BLE communication across Windows, macOS, and Linux.

### DrDocx

 devpost.com/software/drdocx-0ktzl5

Created the AWS infrastructure and visualization tools in Python for an application that streamlined medical professionals' workflows to save them up to several hours a day through automation and data insight during SBHacks VI.

## CERTIFICATES

### AWS Cloud Practitioner

April 2021