Peter Paulson

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Education

Santa Clara University, Santa Clara, CA   Sept 2015   -   June 2019
Bachelor of Science, Computer Science and Engineering
GPA: 3.3
Courses: Internet of Things, Cryptography, Computer Security, Embedded Systems, Object-Oriented Design, Compiler Construction

Projects

Senior Design   May 2018   -   June 2019
- Designed and build a Python-based system to allow confidential data storage while under duress
- Utilized an Oracle database to store encrypted user data
- Implemented large random prime generation for use in the RSA key exchange protocol

Cryptography   Jan 2018   -   June 2018
- Decrypted a set of encrypted files using frequency analysis, pattern matching, and other cryptographic attacks
- Implemented the SHA-3 hashing algorithm
- Implemented a simplified version of the AES encryption algorithm using 16-bit keys

Internet of Things/Resource-Constrained devices   Jan 2019   -   June 2019
- Built an MQTT server on a Raspberry Pi and other RTOS devices
- Configured an nginx server to broadcast video from a webcam to the Internet
- Built a command-line LED controller for external lighting using UART and a Raspberry Pi
- Used OpenCV to create and train a facial recognition system

Object-Oriented Design   Sept 2017   -   June 2018
- Built a system to track, display, and manage business owned by SCU alumni, including an Oracle backend and SQL query generation for users to add and edit their own accounts and listings
- Implemented an interactive campus map that included order processing to on-campus cafés

Personal
- Built a Discord server bot using Python in order to manage a medium-size personal server
- Implemented a system to graphically render fractals and other mathematical shapes in Java using the Graphics class

Work Experience

Catholic Charities of Santa Clara County, Volunteer
Jan 2017 - April 2017
- Created lesson plans and materials for 4th and 5th grade students
- Taught basic STEM concepts such as electrical circuits, elementary programming, and problem solving skills

Skills

Python, Java, C, SQL, Git, Linux, OpenCV, Pycryptodome, Eclipse, Agile, OOP, WICED