

Arnav Nepal

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EDUCATION

University of California, Santa Cruz

Bachelor of Science in Computer Science

- Current Student | 3.49 GPA

Santa Cruz, CA

Aug. 2021 – present

TECHNICAL SKILLS

Languages: *Working Knowledge:* C, Python *Familiar:* Java, HTML/CSS, C++, Javascript

Developer Tools: Git, Oracle Cloud Platform, VS Code, Visual Studio, PyCharm

Libraries: pandas, NumPy, Matplotlib

COURSEWORK AND PROJECTS

Schmidt-Samoa Cryptography | *Computer Systems and C Programming*

Jan 2023 – Mar 2023

- Implemented a working a Schmidt-Samoa (SS) public key cryptography system, a system derived from the widely used RSA cryptography system
- SS is a more secure, but slower, cryptography system compared to RSA
- Implemented my own number theory mathematical functions to perform the arithmetic necessary for SS, including functions to find the greatest common denominator, modular inverse, and modular power.
- *Provided material:* we were provided psuedocode for number theoretic functions, as well as short text and arithmetic descriptions for other functions necessary for SS

Lempel-Ziv Compression | *Computer Systems and C Programming*

Jan 2023 – Mar 2023

- Implemented a working Lempel-Ziv 1978 (LZ78) compression program to compress and decompress text and binary files.
- Wrote a detailed design of the program before starting to guide the programming process and get feedback from peers
- Utilized low-level Input/Output functions to perform buffered I/O and work with blocks of text
- Built prefix tree and word table Abstract Data Types to perform compression and decompression.

Website: arnavnepal.com | *Personal Project*

April 2023 - Present

- Working on building a modern portfolio website with interactive modules
- Learned how to setup a website and build it from scratch using nginx

HOBBIES AND ASPIRATIONS

Technology | *Tech trends, software, gaming*

- I've had a long standing interest in tech and related fields. I aspire to work alongside my peers to further technological advancement for a fair, equal, and secure future.
- In addition to my workspace PC and laptop, I maintain 2 Hobbyist Linux systems to learn more about working with computers on a deeper level. One is located in the cloud and runs a website and a game server, while the other is an always-on home server with SSH access that allows me to access my home network from a remote setting.