

# José Eduardo Corella Carranza

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## EDUCATION

### University of San Francisco

College of Arts and Sciences, *Candidate for Bachelor of Arts in Computer Science*

San Francisco, CA

Aug 2017 - Present

- GPA: 3.5/4.00
- Relevant Coursework (\*currently enrolled): Data Structures and Algorithms, Software Development, Blockchain, Multivariable Calculus, Operating Systems, Cryptography, Computer Architecture\*, Computer Networks

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## Course Projects

**In-Memory Multi-Threaded Search Engine:** <https://github.com/josecorella/project-josecorella>

*Course Project*

- Java based implementation of an in-memory search engine.
- Uses multithreading using a Work Queue structure in order to speed up code by 3x.
- Implemented web crawling to ping real web pages and parse their html using regex expressions to build an inverted index data structure. Ranking of search results is done using the PageRank algorithm.

**Multi-Threaded Webserver:** <https://github.com/josecorella/web-server>

*Course Project*

- C implementation of a web server using sockets and binding connections in order to listen for incoming connections.
- Multithreading is done by default with a constant number of threads depending on how many CPUs one is running.
- Web Server supports file download and uploads without OS interruptions.

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## Work Experience

### Amazon - Software Development Engineer Intern, AFE

*AWS - Cryptography*

Seattle, WA  
May 2019 - Aug 2019

- Built a random number generator according to the NIST HMAC construction. I sourced the entropy from a lava lamp and avalanche noise from a hardware circuit.
- Using AWS Infrastructure such as: Lambda, DynamoDB, SQS, and API Gateway. I built a full stack implementation of the random number generator service.
- Implemented and automated entropy health testing for the random number generator.
- Contributed to both the aws-encryption-sdk-java and the aws-encryption-sdk-c by making bug fixes in the implementation.

### Amazon - Software Development Engineer Intern

*AWS - Cryptography*

San Diego, CA  
May 2020 - Aug 2020

- Wrote a design document outlining customer benefit, impact, and one-way/two-way doors for a Command Line Interface (CLI) available to all Amazonians
- Worked extensively with the [Click](#) Python package to build a robust CLI tool that is being used by 10k+ Amazonians.
- Used git commits in packages across multiple interdependent pipelines to check the status of the pipelines to ensure changes have made it to the production stage.
- Worked with the [Mock](#) Python library to test my code getting 85% code coverage on 800+ source lines of code.

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## SKILLS AND INTERESTS

- Foreign Languages: Spanish (Native)
- Programming Languages: C/C++ (proficient), Python (proficient), Java (proficient), Android (proficient), Swift (beginner), SQL (beginner), TensorFlow (beginner), GO (beginner).
- AWS: DynamoDB, API Gateway, Lambda, EC2, and SQS
- Interests: economics podcasts, films, soccer, and food (preparing and eating)