

# Nicklaus Choo

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## EDUCATION

**CARNEGIE MELLON UNIVERSITY, PITTSBURGH, PA, USA**

Expected Graduation **Dec 2021**

**Major** Bachelor of Science in Computer Science

Cumulative GPA **3.57**

- **Concentration** in Theoretical Computer Science - Algorithms and Complexity
- **Minor** in Mathematics

## SELECTED TECHNICAL COURSEWORK

### COMPUTER SCIENCE

- 10-701 Introduction to Machine Learning (PhD) (Fall 2020)
- 15-411 Compiler Design (Fall 2020)
- 15-210 Parallel and Sequential Data Structures and Algorithms
- 15-213 Introduction to Computer Systems
- 15-251 Great Ideas in Theoretical Computer Science

### MATHEMATICS

- 21-241 Matrices and Linear Transformations
- 21-259 Calculus in 3D
- 15-259 Probability and Computing
- 15-260 Statistics and Computing

## WORK EXPERIENCE

**ZODAJ** | Full Stack Software Engineer Intern • **USA (remote)**

**May 2020 - Aug 2020**

- Devised SMS and Android COVID-19 contact tracing for Senegal in partnership with Senegalese health authorities.
- Designed NoSQL, PostgreSQL databases along with AWS Lambda RESTful API for TCN protocol contact tracing.
- Directed and implemented all permissions, roles within ZODAJ for Amazon AWS databases.
- Created overlap algorithm for  $n$  people in a store that runs in  $\max(O(k) \text{ or } O(n \log n))$ , where  $k$  is number of overlaps.
- Wrote graph algorithms, discrete-time markov chain SIR epidemic modeling for tracking infections.

**BOSCH ASEAN** | Linux Systems Engineer Intern (DevOps) • **Singapore**

**May 2019 - Aug 2019**

- Enabled Jenkins server to run 2 ISO builds in parallel (1 executor, 2 slaves) for testing via dynamic port allocation.
- Identified bottleneck in diagnosing failed builds and wrote Bash scripts to mount QEMU disks on build servers for automatic log extraction, significantly reduce debugging time.
- Modified Jenkins pipeline to reduce deployment testing from 20 mins to 1 min.
- Began migration of current inventory servers to new OCS inventory servers via Ansible for seamless configuration.
- Authored Linux Debian package for unit tests automation (security/functionality) on new OS installations.

**EYEOTA PTE LTD** | Data Analytics Intern • **Singapore**

**Dec 2017 - May 2018**

- Programmed data cleaning and classification of advertiser and buyer data from programmatic buy-side platforms.
- Extracted advertiser target demographic trends via both web-scraping and buyers' purchasing data.
- Streamlined updates of daily, weekly, and monthly audience data sales revenue via complete process automation.

## TECHNICAL SKILLS

### PROGRAMMING LANGUAGES

C | C++ | Bash | Python | Java | Kotlin | SML | HTML | CSS | JavaScript

### TOOLS

- Ansible - server configuration, OS startup configuration
- AWS - Lambda, EC2, S3, RDS, DynamoDB, IAM, Neptune
- Docker - containerized OS build testing, app testing
- Jenkins - continuous feature/pipeline testing and deployment
- Terraform - TCN protocol backend configuration/deployment

### FRAMEWORKS

- Front-end - .ISO download UI, log reporting, Android
- Back-end - build pipeline optimization, DB integration
- Agile - tri-weekly Sprint, daily SCRUM

## INDIVIDUAL PROJECTS

### SHEET MUSIC ASSISTANT

- Created Python application built in TkInter utilizing optical and audio recognition to read sheet music PDFs, playback, display and automatically flip pages for musicians during live performance.

## EXTRA-CURRICULARS

- **Course Tutor (Spring 2020)** 15-251 Great Ideas in Theoretical Computer Science