

# Kalvin Chang

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## EDUCATION

### Carnegie Mellon University – School of Computer Science

Master of Science in Language Technologies

GPA: 4.25 / 4.0 (Advisor: David Mortensen)

Selected Coursework: Machine Learning, Multilingual Natural Language Processing

Pittsburgh, PA

May 2023

Bachelor of Science in Computer Science, Concentration in Human-Computer Interaction (HCI)

Dec 2021

GPA: 3.67 / 4.0 (Dean's List: Fall 2020, Spring 2021, Fall 2021; University Honors)

Selected Coursework: Advanced NLP, Speech Processing, Distributed Systems, Algorithm Design & Analysis, Language Variation & Change, Language Diversity & Cultural Identity, Ethics & Policy Issues in Computing, Computational Forensics & AI, Great Ideas in Theoretical CS, Designing Human Centered Software

## SKILLS

**Technical:** Java, Python, Go, C, HTML, CSS, Amazon Web Services, Standard ML, PyTorch, Ruby, Git, Firebase

**Languages:** English (native, fluent), Mandarin Chinese (native, fluent, CA Bilingual Seal), Taiwanese Hokkien

## EXPERIENCE

### Amazon Web Services

May 2022 - Aug 2022

#### Machine Learning Engineer Intern

Seattle, WA

- Investigating dialect classification methods to explore bias in ASR performance across different dialects

### Software Development Engineer Intern, EC2 Instance Quality Team

Jun 2021 - Aug 2021

- Implemented **pagination** and **presigned URL** for large payloads to work around **Lambda's** 6 MB payload limit
- Sped up the downloading of **S3** objects with **multithreading** for a **Java** Lambda to stop Lambda from timing out
- Onboarded additional features for a Lambda / React frontend to help on-call engineers diagnose EC2 Instances
- Caught elusive bug in AWS Java SDK after collaborating with two SDK teams, leading to a bug fix

### Cardinal Blue Software, Inc.

Feb 2020 - Jul 2020

#### Server Developer Intern, PicCollage

Taipei, Taiwan

- Investigated **PostgreSQL** transition to transactional pooling, which later increased database scalability **18-fold**
- Handled edge cases in a **Ruby on Rails** server's Sign in with Apple auth flow used by thousands of users
- Rerouted requests on the main server's third busiest route to a microservice by using an **Nginx** reverse proxy
- Implemented active cache invalidation to fix stale content bug caused by time-based cache expiry

### Hopscotch Health Pvt. Ltd.

May 2019 - Jul 2019

#### Software Engineering Intern

Pittsburgh, PA

- Implemented **REST** API endpoints for internal tools in **Python** and **Flask** for tobacco cessation and diet apps
- Cleaned, parsed, and summarized 10000+ records from a public cancer hospital in India with **Pandas** and **SQL**
- Developed mobile app's back end with **JavaScript** & **Firebase** Cloud Firestore, Functions, and Messaging
- Managed the release of 2 mobile **ionic** chat apps to the Google Play Store

### Carnegie Mellon University

Aug 2019 - Dec 2019, Aug 2020 - Dec 2020

#### Teaching Assistant, 15-150 Principles of Functional Programming

Pittsburgh, PA

- Updated assignments and handouts for a 150+ student course on **SML/functional programming**
- Taught labs to 15+ students and held weekly office hours to provide intuition on key concepts and homework

## PROJECTS

### Morphotactics ([github.com/dmort27/morphotactics](https://github.com/dmort27/morphotactics))

Feb 2021 - May 2021

- Implemented **Python** interface for linguists to express a language's morphology with finite state transducers
- Compiled dependencies among inputted morpheme classes with a depth-first graph search algorithm

### Question Generation, NLP Team Project ([github.com/brianyan918/Question-Answering-NLP](https://github.com/brianyan918/Question-Answering-NLP))

Oct 2019 - Dec 2019

- Generated grammatical questions on a Wikipedia article using **SpaCy's** dependency parse tree in **Python**