

# AMOS JUN-YEUNG NG

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## WORK EXPERIENCE

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### Reserve (*Full-Stack Software Engineer*)

June 2021 – March 2022

- Released various features involving the entire stack, including integrations with 3P services such as Sumsb and AppsFlyer
- Maintained/improved existing soundex system for OFAC SDN compliance to below 5% false positive rate prior to manual review
- Standardized development environment via Dockerization, enabling new hires to onboard with a single command after Git setup

### Google (*Backend Software Engineer*)

July 2017 – June 2021

- Drove Duo metrics improvements from initial identification of cross-stack opportunities to implementation and final verification
- Biggest cumulative wins include -10% in ring latency, +3.1% in call connection rates, verified extensively by A/B testing
- Implemented major migrations for the Duo client and a major rewrite of the notifications targeting pipeline that ran 500% faster
- Added Gaussian and post-aggregation partition selection, and “distinct per key” counts, to the internal differential privacy library

### Allen Institute for Artificial Intelligence (*Research Engineer*)

June 2015 – July 2017

- Optimized and simplified the Semantic Scholar (S2) data-processing Spark pipeline to run in 1 hour instead of 9 hours
- Improved S2’s search relevance from an NDCG<sub>1</sub> of 0.68 to 0.82, and a final Kendall’s tau of 0.67 between S2 and Google Scholar
- Integrated new neuroscience-related features into existing computer-science only search experience

## EDUCATION

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### Carnegie Mellon University (CMU)

June 2013 – May 2015

M.S., Language Technologies (aka Natural Language Processing)

3.64 GPA

### University of California, Los Angeles (UCLA)

September 2010 – March 2013

B.S., Physics

3.68 GPA

## GREP-FRIENDLY COMPUTER SKILLS

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- Programmed in Scala, C++, Python, Java, Go, Rust, Ruby, Javascript, Common Lisp, Clojure, Haskell, Mathematica, Matlab, IDL, and bash scripting; worked with HTML, CSS, SVG, LESS, and Sass (SCSS) code; used JSON, Protobuf, and gRPC
- Hosted production websites on Heroku, Digital Ocean, and Amazon Web Services (AWS), using NixOps and Docker
- Developed websites using Ruby on Rails, Django, NodeJS, the Play framework, and plain Jetty; storing structured data using MongoDB, SQLite, MySQL, PostgreSQL, and Elasticsearch backends; worked with plain Javascript and React frontends
- Created simulations with OpenGL, GLUT, pygame, and Open Dynamics Engine
- Used Hadoop, Pig, BigQuery, Flume, and Spark to implement large-scale machine learning and data processing pipelines

## RESEARCH EXPERIENCE

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### Construction Grammar Parser (*Dr. Scott Fahlman, Language Technologies Institute*)

August 2013 – June 2015

- Researched ways to recognize and understand natural language commands, statements, and queries in the context of car mechanics
- Using semiring parsing with construction grammar to retain the full expressiveness of natural language

### Social Network Analysis (*Dr. Aram Galstyan, Information Sciences Institute*)

Fall 2012 – April 2013

- Developed a string metric that identified the original posts of over 90% of edited quotes in replies
- Predicted soccer game outcomes based solely on linguistic properties of a game thread, with 70% accuracy

## PERSONAL PROJECTS

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### ShallWeDebate.com

January – September, 2014

- Displayed complex arguments in a clear visual and interactive manner with D3.js
- Worked on multiple parts of the web stack, from server setup to backend and frontend programming to configuring DNS records

### Statistical Mechanics Simulation

December 2011

- Developed a 3D particle-collision simulation based on classical mechanics using OpenGL and GLUT’s C++ bindings
- Demonstrated the principles of entropy increase and thermodynamics

## LEADERSHIP EXPERIENCE

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### Student Representative of the Graduate Students Assembly (CMU)

February 2014 – June 2015

- Represented the Language Technologies Institute (LTI) when debating school-wide policies or the GSA budget