

Qingzhuo Aw Young

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» EDUCATION

CALIFORNIA INSTITUTE OF TECHNOLOGY

COMPUTER SCIENCE
2017-18 | Pasadena, US

Exchange year specializing in AI/ML.
Completed all AI/ML classes offered in 2017-18.
GPA: 4.2/4.0

UNIVERSITY OF EDINBURGH BSc (HONS)

ARTIFICIAL INTELLIGENCE &
COMPUTER SCIENCE

May 2019 | Edinburgh, UK
Top of class in Year 1&2.
First class honours (1:1) expected.

» LINKS

github.com/veniversum
linkedin.com/in/awyoungqz
veniversum.me (Portfolio)

» SKILLS

MOST EXPERIENCE

(5+ YEARS)

Python • Java
Javascript • Git/Hg

SOME EXPERIENCE

(3+ YEARS)

Haskell • \LaTeX • Typescript
TensorFlow • Keras • C

NATURAL LANGUAGES

English *Native Language*
Mandarin *Full Professional Proficiency*

» INTERESTS

Machine Learning
Artificial Intelligence
Natural Language Processing
Distributed Computing
Data Visualization
Application Security
Network Security

» EXPERIENCE

WHATSAPP | SOFTWARE ENGINEERING INTERN

Jun 2018 - Present | Menlo Park, US

- Currently working on server core infrastructure, including core libraries, monitoring & alerting and source control.

GOOGLE | SOFTWARE ENGINEERING INTERN

May 2017 - Aug 2017 | Singapore

- Worked mainly on Tez™- on server performance monitoring & optimization.
- Increased performance of existing system by 60-100x, drastically reducing processing times allowing for more immediate access to server statistics.
- Automated batched timeseries analysis of metrics, stored as Capacitor columnar format allowing querying through Dremel(BigQuery).
- Built server health monitoring dashboard on Typescript + Angular for engineers to identify server issues, with integrations with many other internal infrastructure.
- Nominated for peer bonus for playing an integral role in gTech's launch of automated chat support in US, EMEA & APAC regions. I integrated human handover and bot analytics w/ sentiment analysis with the system, and made it scalable planet-wide.

OCBC BANK | SOFTWARE ENGINEERING INTERN

Jun 2016 - Sep 2016 | Singapore

- Developed the first Open Banking API in Asia, built on top of WSO2 middleware stack. Supports multi-tenant OAuth 2.0 authorization flow.
- Migrated existing APIs to JAX-RS framework and doubled the number of APIs available.
- Overhauled web application security, fixing injection, CSRF & XSS vulnerabilities, server hardening including bytecode patching of Java binaries.
- Developed Android apps to showcase APIs and realize innovative ideas.

J.P. MORGAN | TECHNOLOGY PROGRAM SPRING INTERN

April 2016 | Glasgow, UK

- Android and iOS development in the Mobile Center Of Excellence.

INSTITUTE OF HIGH PERFORMANCE COMPUTING, A*STAR

DATA SCIENCE RESEARCH INTERN

2013 - 2014 | Singapore

- Data mined Twitter for tweets, targeted on location and keywords, collecting corpus of over 230,000 tweets over 6 months for local brands.
- Implemented and trained machine learning classifiers for sentiment detection in terse, informal written corpus.
- Performed parameter optimization and implemented novel emoticon detection & slang stemming to improve classifier accuracy.
- Developed web application using D3.js for visualization of analyzed data. Was able to perform time-series analysis and identify trends in public sentiment correlated with real world events.

»AWARDS

2017 Edinburgh Award :
Office Bearer
2017 Edinburgh Award :
Work Experience
2016 Edinburgh Award :
Digital Ambassador
2016 Arthur Trevelyan
Scholarship in
Engineering
2016 HackTheBurgh ARM &
Blackrock Prize
2016 HackLondon
Domain.com Prize
2016 KAL Informatics
Scholarship Award
2016 StacsHack Bloomberg
Prize
2016 SmartDataHack Dixons
Carphone Prize
2015 1st Place UoE
Informatics Functional
Programming
Competition
2015 Hackathon@SG
2014 2nd Place Geekcamp
CTF

»VOLUNTEERING & ORGANIZATIONS

GOOGLESERVE | VOLUNTEER

June 2017 | Singapore

Helped with the development of GUI component of Scratch 3.0, and help host intro to coding workshop for youths.

PREWIRED | MENTOR

Feb 2016 – Mar 2017 | Edinburgh

Volunteer mentor teaching Javascript & Python at Prewired Edinburgh, an after-school programming club for under 19s.

COMPUTING & AI SOCIETY (COMPSOC) | VICE PRESIDENT

Mar 2016 – Mar 2017 | University of Edinburgh

Management of society, sponsorships and hosting talks and other events for over 250 members.

»PROJECTS

MULTI-AGENT IMITATION & REINFORCEMENT LEARNING IN A TURN-BASED STRATEGY GAME | VIDEO

reinforcement learning, multi-agent, cooperative agents

In this project, we consider the problem of learning policies in a multi-agent strategic game, i.e., where each player possesses a number of agents, and the agents have to cooperate in order to achieve a common goal. The multi-agent setting is more challenging than the common single-agent one, as it requires coordination and cooperation among the agents. We researched and implemented state of the art reinforcement learning algorithms for both model-free end-to-end learning and model-based controller approaches. We achieved performance that rivals an amateur human player, measured in ELO rating.

Presented in Caltech Advanced Topics in Machine Learning 2018 poster session.

CALTECH ANNUAL NETFLIX PRIZE MOCK COMPETITION

| SCOREBOARD • GITHUB

collaborative filtering, recommender systems

Lead a team of 4, architected and implemented ML pipeline for training an ensemble of models including TimeSVD++, conditional RBMs, AutoRec, variational autoencoders, neural autoregressive distribution estimator, CDL. Notable work include feature engineering, out-of-core algorithms, low level I/O optimizations, linear algebra kernels 2x faster than Intel MKL implementation.

Achieved 8.96% RMSE improvement over Cinematch baseline, and set the 10-year record of novelty score in the competition.

TREKSTAR | GITHUB

path finding, orienteering, geographic information system

TrekStar (codename Ariadne's Thread), is a project that I am working on with a group of students from Caltech. We're trying to take a brand new approach to automatic route planning ala Google Maps. Instead of going for the shortest or quickest path like most route planners today, we're trying to make the route more enjoyable. Our users can specify a bunch of non-trivial preferences, such as the amount of greenery they want to see on their way, and we will generate them a route that best matches these constraints.

The eventual goal of the project is personalized route planning using structured collaborative filtering.