

# QIAN QU

📍 1146 Harrison St, Seattle, WA, 98109 📞 434-328-0936 ✉ qq8jn@virginia.edu 🔗 quq99.github.io 🌐 github.com/quq99

## EDUCATION

### University of Virginia

Master of Computer Science, GPA: 3.9/4.0

Charlottesville, VA, United States

Aug 2018 - Dec 2019

### Nanjing University

Master of Electronic and Communication Engineering(*postgraduate recommendation*), GPA: 4.38 / 5.0

Nanjing, China

Sep 2015 - Jul 2018

Bachelor of Electronic Information Science and Technology, GPA: 4.26 / 5.0, Top 15%

Sep 2011 - Jul 2015

- Awards: First Prize of Postgraduate Scholarship(twice), 2015&2017
- Second Prize of the People's Scholarship, 2012

## WORKING EXPERIENCE

### Amazon.com - Seattle, WA

Software Development Engineer

Mar 2020 – present

**Brand Classifier(BC) onboard to Item Pipeline (Guice, IONJava, JAX-RS, AWS: S3, DynamoDB, SDK, CloudWatch, Sagemaker)**

- Onboarded BC Online Service as an Plugin to Item Pipeline that provides 2000TPS brand predictions to Contributions.
- Updated ML model in service and improved the recall from 46% to 74% at precision 95% for US, CA marketplace.
- Implemented Confidence Score Normalization and Globalizer for multi-marketplace predictions.
- Contributed to Operational Readiness including dashboard metrics, monitors, alarms and run-books.
- Created Integration test for checking the correctness of the model predictions.

**Brand Classifier M3 model training/evaluation workflow (Guice, AWS: Lambda, S3, DynamoDB, CloudFormation, CloudWatch, EMR, Spark, SQS, Sagemaker, AMS, M3)**

- Created a workflow that automatically train/evaluate the ML models for ASIN/EPC/Contribution over 12 marketplace.
- Orchestrated the workflow using AWS Lambda Functions triggered by designed M3 template.
- Integrated Data Acquire, PreLabel, Label, PostLabel and Train/Evaluate steps and provided UI for better management.
- Implemented different sampling strategies for ASIN/EPC/Contribution skew data using Spark.

**Brand Classifier brand safelist Elastic Search(ES) service (AWS: API Gateway, Elastic Search, Lambda, AMS)**

- Utilized AWS ES to support 700K brands safelist at scale to improve tagging speed, accuracy and model performance.
- Integrated with safelist generation workflow to automatically upload and index safelist for each brand catalog version.
- Integrated with M3 workflow and AMS tool to automatically use the latest brand safelist in labeling step.

**Brand Classifier product type production (Tensorflow, Scikit-learn, AWS Sagemaker, gunicorn, Flask)**

- Utilized product type information to distinguish homonyms brands and improved model performance on 700K brand set.
- Trained/evaluated and deployed the new model on over 12 marketplaces for ASIN/Contribution data.
- Improved the model performance on over 12 marketplaces. e.g. UK ASIN data recall from 57% to 72% at precision 95%.

## NOTABLE PROJECTS

### Compiler for Meggy Java

🌐 [github.com/quq99/Sp19\\_compiler](https://github.com/quq99/Sp19_compiler)

Java, Assembly, Graphviz, Shell scripts

Mar 2019 – May 2019

- Developed a compiler for MeggyJava using visitor design pattern. Completed features such as function, class, call stack, static scope, type checking or cast, dynamic memory allocation.
- Implemented lexer, parser, semantic analyzer, AVR code generation visitor. Wrote high coverage regression test.
- Visualized Symbol Table and Abstract Syntax Tree (AST) via Graphviz.

### Hair Dye

🌐 [github.com/quq99/hair-dye-android](https://github.com/quq99/hair-dye-android)

Pytorch, ONNX, Java, Python

Mar 2019 – May 2019

- Responsible for the neural network implementation, part of data loader and deploying to Android Application.
- Deployed the Pytorch model to Android Application by using ONNX and Fritz framework.
- Achieved F1 Score of 0.9 and IoU score of 0.817 on Figaro 1K dataset by using HairMatteNet model.

## SKILLS

**Languages:** Java, C/C++, Python, Scala, Shell script, SQL, JavaScript

**Framework:** Tensorflow, Pytorch, Scikit-learn, Google Guice, Spark, Gunicorn, Flask

**System & Tools:** GNU/Linux, Git, Vim, Brazil Build, Docker, AWS(Lambda, EMR, CloudWatch, S3, Elastic Search, API gateway, DynamoDB, Redshift, SQS, CDK, EC2, CloudFormation)