

# RAYMOND HUANG

✉ [hello@raymondhuang.com](mailto:hello@raymondhuang.com)  
☎ [+1 \(425\) 443-2437](tel:+14254432437)  
🌐 <http://raymondhuang.com>

## TECHNICAL SKILLS

Languages, frameworks: Java, Spring, Ruby, Ruby on Rails, JavaScript, TypeScript, Angular 1/2  
AWS (proficient): DynamoDB, S3, SNS, SQS, Redshift, CloudFormation, CloudWatch, IAM  
AWS (familiar): CodeBuild, CodeDeploy, CodePipeline, ElastiCache, EC2, EBS, ELB, CloudFront

## WORK EXPERIENCE: AMAZON.COM

📍 SEATTLE, WA, US    Software Developer Engineer II

2014 - NOW

I work for the [transportation optimization team](#). I develop service oriented solutions to reduce transportation costs under various constraints employing techniques such as control theory and linear optimization.

### Resource Optimization Engine

Existing system assigns carriers to individual shipments greedily, and optimizes only for business constraints.

- Built an optimization engine to solve for all shipments across the network using a linear optimization model that models the transportation network, developed in conjunction with research scientists, using the proprietary linear optimization software, [Xpress](#)
- Computes resource opportunity costs for utilizing transportation capacity to influence carrier assignments
- Reduced memory consumption with GC tuning techniques, string deduplication, in-memory/disk/database caching, and careful management of new objects
- Realizes yearly transportation cost savings of \$200 million in North America

### Optimization Engine Aware Simulations Workflow

Legacy simulation system was slow, and did not take into account the effects of the resource optimization engine.

- Built a new simulation workflow leveraging AWS SWF that takes an input of shipments, replays each shipment, processes the shipment responses, sends them to the resource optimization engine, and processes the results
- Horizontally scalable by distributing shipments across hosts
- Generic API interfaces and components allow for extensibility and ease of on-boarding new use cases
- Worked extensively with the demand forecasting team to onboard, and improved the WAPE of the demand forecast by 5% while also reducing forecasting runtime by 30%

### Realtime Replay Client

Required a way to test features and collect metrics in an environment that mimics production traffic.

- Built a client that listens to production messages via AWS SNS and SQS and replays each request against a parallel production-like environment
- Used historical data to estimate when shipments are fulfilled after materializing in a warehouse
- Implemented simplified versions of our clients to improve accuracy of the replay client, since upstream API calls affect downstream requests
- Enables finance to collect cost savings of features by comparing data between production and the replay client

## EDUCATION

📍 WATERLOO, ON, CA    University of Waterloo: Bachelor of Software Engineering

2009 - 2014