

# HYUN SUK RYOO (MAX RYOO)

## Machine Learning Engineer

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## EDUCATION

B.A. Computer Science (3.7) & B.A. Statistics (Biostatistics Concentration) (3.6)  
University of Virginia - Class of 2020

## EXPERIENCE

### Software Engineer

#### Capital One (Center For Machine Learning & Anti Money Laundering)

Aug 2020 – Current

McLean, Virginia

- Develop a belief propagation algorithm with Scala using graph database to determine risk scores of each bank customer to prevent money laundry.
- Develop a full stack application for clients to use to research outputs of above project.
- Served as a tech lead to develop a pipeline to pull from various database sources to mine large amounts of data to be available for many different downstream applications.
- Technologies Used: Scala, Spark, Pyspark, Python, Gremlin, Neptune, React, Flask, AWS

### Junior Software Developer

#### Thinking with Tools, LLC

Dec 2019 – Aug 2020

Charlottesville, Virginia

- Work together with a team to make new features and maintain data for a web application. Make a mobile/web-app with one codebase.
- Technologies Used: Ionic, Angular, Coldfusion, JavaScript, MS SQL Server, Postgress

### Software Engineer Intern

#### Fannie Mae (Capital Markets Treasury CASH TMS L3 Team)

Jun 2019 – Aug 2019 (3 Months)

Herndon, Virginia

- Developed a end to end Dashboard that tracks all Fannie Mae wire payments. The dashboard is integrated into the Capital Markets Treasury CASH TMS L3 Team. The dashboard keeps tracks an average of net \$13 Trillion wire transactions a year. The dashboard makes it easier for employees to track problematic wires and see transactions easier on a day to day basis.
- Automated the Deployment Processes of Applications to one click deployment
- Developed a REST API for Calendar Date Services and ID Services
- Technologies Used: Spring, MS SQL Server, Oracle, Java, Python, Maven, HTML/CSS, JavaScript

### Data Science Contractor / Database Developer Intern

#### S.W.I.F.T. (Innovation Lab / Database Development)

Jun 2018 – May 2019

Manassas, Virginia

- Developed a REST API for filtering and updating Security Violation logs. The API filters out Security Violations from k thousand line files to 100 lines. Original time of completion (x hours or days) is now minutes. Continued to work on this project as a Data Science Contractor incorporating Data Science techniques.
- Technologies used: Node js, Express js, MongoDB, SQLite3, Python, HTML/CSS, Docker

## PERSONAL DEVELOPMENT PROJECTS

### Founder / Lead Developer

#### CLASS Analytics

Dec 2020 – Current

Ashburn, Virginia

- Main Developer for <https://class-analytics.com/home>
- Technologies Used: AWS Architecture, Angular, R, Node JS, PostgreSQL

## SKILLS

### Certifications

AWS Solutions Architect Associate

### Programming Languages

Scala Python Java C++ R SAS SQL  
Gremlin PHP JavaScript TypeScript  
ColdFusion LATEX x86 Docker

### Frameworks

Spark Angular React Node/Express JS  
Spring Framework Ionic Flask

### Libraries/Packages

Hadoop Pyspark Scikit-learn Tensor Flow  
Keras AWS Tidyverse Numpy/Pandas npm  
Maven Tableau Mathematica

### Databases

Neptune DyanmoDB Oracle MS SQL Server  
Mongo DB MySQL SQLite3 PostgreSQL

### OS

Unix/Linux Windows

### Languages

English Korean

## RESEARCH

Interests: Machine Learning, Model Analysis, Quantitative Methods

Research Assistant

### Machine Learning and Data Mining in Psychology

- Aug 2019 - May 2020 UVA (Psychology)
- Research in the field of Psychology with technologies of Machine Learning and Data Mining with DTM and Text/Network Analysis
- Supervisor: Hudson Golino Ph.D.

### Data Engineer

#### Measure of Cognitive Ability Research

May 2019 - Feb 2020 USC & UVA

- Developed a Web-server and Web-application to maintain and process data from Measure of Cognitive Ability (MOCA) tests. The purpose of this research project is to develop a measure of cognitive ability and its scale of cognitive ability.
- Technologies Used: AWS, Wordpress, MySQL, Python, Scikit-learn, R, Tidyverse
- Principal Investigator: Ji Hoon Ryoo Ph.D.