

# YUYANG (MIKE) LI

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## EDUCATION

### Brown University

*M.S. in Data Science*

Providence, RI

### Boston University

*B.A. in Mathematics and Economics (Double Major), Minor in Computer Science*

Boston, MA

## WORK EXPERIENCE

### The Institute of Electrical and Electronics Engineers (IEEE)

Providence, RI

*Research Assistant*

*Sep. 2020 - Dec. 2020*

- Built an LPG (Label Property Graph) graph model of large-scale MAG (Microsoft Academic Graph) data based on its RDBS schema
- Preprocessed using **Java** and loaded IEEE's data from **AWS S3** to Neo4j graph database to analyze entities and relationships based on graph model; optimized the loading speed by 30% using **Neo4j-admin** parallel processing configurations
- Applied three different community detection algorithms to recognize citation cartels; selected two of them which are appropriate for IEEE's use case and provided them to IEEE's data team for reference

### BJ's Wholesale Club Holdings, Inc.

Westborough, MA

*Data Science Engineer Intern*

*Jun. 2020 - Aug. 2020*

- Developed an automated tool for transforming address for BJ's existing membership by **Python** and **ArcGIS API**, reaching 0.95 accuracy compared to the existing tool; this new tool will be put into production, which will potentially contribute to \$100,000 incremental margin per year
- Created data pipelines to clean, transform, and combine over 1 million members' demographic and location data stored in **AWS S3**, expected to reduce manual processing time by 100 man-hours per year

### BU Spark!

Boston, MA

*Software Engineer Intern*

*Jan. 2019 - May 2019*

- Scraped Twitter API and LinkedIn and managed **MongoDB** to analyze over 29,000+ captured tweets related to the employment status and educational background of Jordanian; implemented data transformations by using MapReduce in **Hadoop**
- Built clustering by k-means++ algorithm and conducted sentimental analysis in **Python** and **R**; computed correlation coefficient and implemented data visualization in **Folium** to display different layers of geo information results

## PROJECT EXPERIENCE

### Personalized Job Recommendation Engine

- Developed an interactive web application for users to search and apply job positions online using **JavaScript**, **HTML**, **CSS** and **AJAX**
- Implemented three **Java Servlets** with **RESTful** APIs to handle HTTP requests and responses
- Extracted keywords from description of positions using MonkeyLearn API
- Utilized **MySQL** database on **Amazon RDS** to store position data fetched from Github API
- Designed a content-based algorithm based on favorite list and keywords extracted using TF-IDF algorithm
- Deployed the Apache Tomcat web service to **AWS EC2** with **Docker**

### Online Food Ordering System

- Implemented Rest API via **Spring MVC** including registration, menu searching and ordering, checkout, etc
- Utilized **Hibernate** to access and operate the data storage (menu, restaurants, etc)
- Provided both authentication and authorization via Spring security to protect the application from malicious attacks
- Used the Spring framework core technologies to loosely decouple all the components in the application
- Built the client side with **ReactJS** and **Ant Design** to allow users to add items to the shopping cart and place orders

### Starlink Trajectory Visualization

- Designed and developed a real-time satellite track visualization dashboard using **ReactJS** and **D3**
- Built location, altitude, and duration-based satellite selector to refine satellite search
- Animated selected satellite paths on a world map using **D3** and **Google Map API**
- Deployed the dashboard to **AWS Amplify** for demonstration

### Tinder-like News App

- Designed the Instagram Flavor News App based on Google Component Architectural **MVVM** Pattern using **Java**
- Implemented the bottom bar and page navigation using **JetPack** navigation component
- Utilized 3<sup>rd</sup> party **CardStackView** (RecyclerView) to support swipe gestures for liking/disliking the news
- Built the Room Database with **LiveData** and **ViewModel** to support local cache and offline model
- Integrated **Retrofit** and LiveData to pull the latest news data from newsapi.org

## SKILLS

- **Programming Languages:** Java, Python, SQL, JavaScript, HTML/CSS
- **Cloud and Database:** AWS (EC2, S3, RDS, Amplify, Lambda), MongoDB, MySQL/SQLite, Neo4j
- **Web / Mobile Development:** Java Servlet, React, Android