Karen Mu

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Education

Boston University - Questrom School of Business   **Aug 2021 - January 2023**
Master of Science in Mathematical Finance and Financial Technology   *Boston, MA*
- Relevant Coursework: Fundamentals of Finance, Programming for Mathematical Finance, Stochastic Methods of Asset Pricing I, Statistics for Mathematical Finance

Rensselaer Polytechnic Institute   **Aug 2017 - May 2021**
Bachelor of Science in Cognitive Science, Minor in Mathematics & Psychology   *Troy, NY*
- Cum Laude (GPA: 3.65/4.00)
- Relevant Coursework: Information Retrieval (Thesis), Linear Algebra, Intro. to Number Theory, Multivariable Calculus, Rensselaer Center for Open Source, Data Structures, Intro. to Algorithms, Intro. to Artificial Intelligence, Machine Learning from Data

Technical Experience

Quantitative Developer Intern   **May 2021 - Aug 2021**
Ellington Management Group   *Old Greenwich, CT*
- Developed and tested across all parts of the tech stack - performed backend to SQL integration and database optimization, built various web pages, and implemented a password manager (C#, REST API, JavaScript) for an internal web application used by traders and analysts
- Designed and developed a CDS pricer (C#) that replaced an Excel-based calculator and reduced number of input parameters by 55%

DevOps Software Engineering Co-op | Web/Mobile Chapter   **July 2019 - Dec 2019**
FM Global   *Johnston, RI*
- Conducting implementation of API (SpecFlow, C#) and UI unit tests (Jasmine, TypeScript) in Gherkin formatting, UI browser tests (Selenium, C#), UI tasks using Angular (HTML, SCSS, Bootstrap), API integration, bug fixes, and exploratory testing on internal web-based application
- Effectively treated as a full time developer - self assigned and independently completed tasks with respect to acceptance criteria and visual mock-ups provided by UX designers
- Reduced build times from 2 hours to 40 minutes by parallelizing CI/CD and PR build pipelines which improved sprint burndown by 25%

Projects

Time Sensitive Retrieval Improvements | Thesis Substitute   **Nov 2020 - Dec 2020**
Rensselaer Polytechnic Institute   *Troy, NY*
- Using Solr extension DisMaxQParserPlugin, assigned more weight to temporal aspects of query and document by manipulating boost values, adjusting weights of query headline and date fields, and modifying query parser parameters
- Improved performance (at or better than baseline) in 75% of queries tested with TREC dataset - solidifies past research in that placing emphasis on dates in query yields more accurate time-sensitive retrieval results

Skills

Coding Languages: Python, C++, C#, C, R, LaTeX, CSS, HTML, SQL, JavaScript, TypeScript, Node.js
Technologies: MacOSX, Linux, GitHub, Git, Azure DevOps, Visual Studio, VS Code, RStudio, Swagger, Solr
Frameworks: ASP.NET Core, REST API, SpecFlow, Selenium, Jasmine, Gherkin, Angular, Bootstrap
Methodologies: Agile, Scrum, 2-week sprints, User Story Pipeline
Certifications: Bloomberg Market Concepts