Jillian Kupchella

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WORK EXPERIENCE

Software Engineer, Bluefoot, Inc.   Arlington, VA (Remote) | November 2022 - Present
- Served on a core team of developers creating both commercial and government SaaS products in the patent space
- Technologies: PostgreSQL, Python, PySpark, Databricks, Docker, React.js, AWS resources (Opensearch, ECR, ECS, EC2, Lambda, SQS, Route53)

  Project: Full-Stack Web App (for government due diligence)
  - An online platform for government employees to perform due diligence on companies applying for US government funding (includes sensitive technologies that cannot be disclosed)
  - Key Contributions
    - Designed a system to perform delta updates on 400M+ records (83 GB), and batch process newly requested companies via a job queue
    - Designed and implemented a REST API to return company-level due diligence data; developed authentication logic using both JSON Web Tokens and API keys
    - Implemented a React frontend with a login page and a search page that allows users to search through 15M company names via Opensearch autocomplete, display due diligence metrics on a selected company, and download an auto-generated pdf report of company-specific due diligence data

  Project: Data Pipeline for Entity Resolution
  - A system to generate a unified company ID based on companies from 3 distinct data sets (a corporate data set with 15M companies, a patent data set with 11M patent assignees, and a government funding data set of 33K companies)
  - Key Contributions
    - Created a system of regularly updated tables to record relationships between corporate, patent, and government data, including primary keys, foreign keys, and other custom constraints
    - Implemented a weekly process to ingest new company names, clean data in Python, and perform a combination of exact-matching and fuzzy-matching to create mappings between data sets and generate a unifying company ID

  Project: Data Science Modeling for Company Innovation Score
  - A series of regression models to generate a metric for a company's level of innovation, based on their patent and financial data
  - Key Contributions
    - Performed a deep analysis of patent data (including citations, claims, transfers, litigation, and assignment) to develop a set of model features
    - Implemented a combination of gradient and linear regression models to predict the quality of the patent portfolios of 15M corporate trees

Associate Consultant, Hayden Consulting Group   Boston, MA | June 2021 - November 2022
- Created a system to detect accumulators and maximizers applied to patients on the pharmacy and medical benefit
- Developed strategies for pharmaceutical manufacturers to increase patient access for drugs with unconventional routes of administration
- Created an Excel-based share shift model to advise companies on whether to engage in payer contracting
- Analyzed up to 3 million rows of healthcare claims and sales data in SQL and Excel to develop pricing strategies for pharmaceutical manufacturers in the anti-migraine space
- Prepared powerpoint decks and presented at client meetings

Software Engineer, Brown University Rockefeller Library   Providence, RI | Summer 2018
- Worked 30 hours per week developing Python scripts that convert Google spreadsheets into XML files that follow the MODS XMLschema
- Used a Google Drive API to analyze thousands of academic research papers and senior theses
- Developed a mapping function that uses the assignFAST API to map local keywords to formalized keywords

Independent iOS Project, Designed and Developed a "General Strength" iOS App   Providence, RI | Summer 2018
- Devoted about 180 hours; learned Swift and XCode to create an app for the Brown Cross Country team
- Provided a user-friendly platform to view the Brown University women's cross country general strength routines

- Available on the App Store for one year as Brown XC General Strength

EDUCATION
Boston University, Boston, MA   Graduation January 2024
Master of Science in Software Development | GPA: 3.93

Brown University, Providence, RI   Graduation May 2021
Bachelor of Arts in Contemplative Studies | GPA: 3.92
- **Relevant Coursework:** Multivariable Calculus; Linear Algebra, Scientific Computing and Problem-Solving; Methods of Applied Math; Algorithms and Data Structures; Discrete Structures/Probability; Statical Inference; Computer Systems; Implementation of Programming Languages

ADDITIONAL INFORMATION
Technical Skills:
- Advanced: Python, SQL, Docker, Excel, AWS (ECR, ECS, EC2, Opensearch)
- Proficient: Java, React.js, PySpark
- Experience: C, Swift, MATLAB, JavaScript, JQuery, HTML, CSS

Interests: Marathon running (personal best 2:54), triathlons, hiking, biking, guitar playing, songwriting