Joseph Chang   **Email:** me@changjoseph.com
                                                              Residence: Northern Virginia

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EXPERIENCE SUMMARY

I am a data scientist and software developer with 6 years of professional level experience. I also have experience in machine learning and web development. For my projects, I have relied on Git, and I am comfortable with agile methodologies including Kanban and Scrum.

COMPETENCIES

- Data Analysis
- Machine Learning
- Database Design and Development
- Web Development

- Software Development
- Software Engineering
- Agile Methodologies
- Cloud Platforms

CERTIFICATIONS

BAH Python Expert Badge, BAH Python Practitioner Badge, BAH SQL Practitioner Badge, BAH JavaScript Practitioner Badge, BAH Technical Excellence Data Science, NVCC Database Specialist

SUMMARY OF SKILLS, TOOLS, AND TECHNOLOGIES:

Programming Languages: Python, Java, SQL, Haskell, C Language, HTML/CSS, Javascript/Typescript, C#, R

Frameworks: Numpy/Pandas, SciKit-Learn, Bootstrap, Matplotlib

Software/COTS: Git/Github, Excel, Tableau, PowerBI, Qlik

Operating Systems: Windows, Linux (Ubuntu), MacOS

PUBLICATIONS

Measuring Illicit Activity in DeFi: The Case of Ethereum

EDUCATION

Bachelor of Science in Computer Science, George Mason University, 2022

EXPERIENCE DETAILS

Booz Allen Hamilton, Inc., Senior Consultant   6/2022 – Present
McLean, VA

AF Data Scientist (6/2024 – Present)

- Developed Python to SQLite backend to power a web app dashboarding tool
- Pulled and cleaned relevant historical and live datasets and shapefiles
- Rapidly prototyped front-end for dashboarding tool
- Maintained and improved Python EV applications/tools used by the team's engineers
- Refactored and revised various Python scripts to prevent continued use of deprecated library functions and inefficient code to greatly improve application runtimes and code readability
- Built new application/tool features based on engineer feedback and needs
- Adapted the team's Python tools for integration within the cloud environment, ensuring seamless compatibility with our team's developed pipeline, while prioritizing a quick and streamlined implementation process

Carbon Free Electricity Data Scientist (4/2024 – 2/2025)

- Researched and documented CFE topics including geographic mappings for electric regions by utilities/entities, data sources for energy tracking and their potential use cases, and purpose of electric entities and their effect on other entities
- Forecasted anticipated electrical load growth for sites by utilizing internal cloud Energy Consumption datasets as well as public energy datasets

Qlik Developer (4/2024 - 5/2024)

- Developed Qlik Dashboard for use in cloud
- Worked alongside documents data team to ensure correct formatting and styling for seamless data pull into the dashboard with potential for scaling
- Optimized dashboard user experience by ensuring an intuitive interface while working around Qlik software limitations

DHS Data Scientist (2/2023 - 4/2024)

- Provided analytical support to the DHS team, conducting in-depth analyses on diverse datasets to uncover opportunities for further exploration and insight
- Identified root causes of employee attrition and developed actionable recommendations to mitigate overall attrition rates
- Documented database connections to facilitate seamless collaboration within teams and support team success through effective documentation practices
- Conducted comprehensive analysis of motor vehicle fleet and fuel consumption patterns to formulate a strategic transition proposal from ICEVs to EVs
- Conducted thorough investigations of validation dashboards to identify and rectify potential issues as well as discrepancies within their respective data sources

Internal Data Scientist (2/2023 - 2/2023)

- Collaborated with a colleague to analyze factors contributing to employee attrition, discern trends and anomalies, and provided data-driven recommendations derived from thorough analysis to strategically reduce overall attrition rates within the company

BAH Technical Excellence Data Science (6/2022 – 8/2022)

- Accelerated 7 week Data Science course with 195 hours of applied learning in two months

- Reinforced Data Science topics including Python, data analytics, and data visualization
- Built further technical experience on regression, classification, clustering, Tableau, MatPlotLib, Plotly, and Seaborn
- Used techniques including: Linear Regression, Multiple Linear Regression, Logistic Regression, kMeans, DBSCAN, Decision Trees, Random Forests, and more

George Mason University, Research Assistant   9/2019 – 6/2022
Fairfax, VA

Decentralized Finance / Blockchain Research
- Conducted thorough analysis across multiple blockchain currencies, systematically flagging transactions involving addresses previously identified as malicious, thereby contributing to the continuous expansion and refinement of address database for improved threat detection and mitigation strategies
- Engineered and refined MySQL scripts to incorporate machine learning concepts, enabling the proactive identification of potentially malicious Ethereum addresses
- Developed Python scripts to efficiently manage tracking of transactions on Litecoin's node, storing transaction data as pure binary JSON files to optimize for system memory within Python and preprocess the data for subsequent analysis purposes
- Coauthored a published article on the analysis of Ethereum, Litecoin, and Bitcoin Cash, exploring insights, trends, and the identification of potentially malicious transactions

Major Accomplishments:
Achieved a significant reduction in storage utilization of blockchain node scripts by 25%, leveraging advanced optimization techniques, alongside an enhancement in efficiency of the MySQL query iterations (machine learning algorithm), resulting in a notable 50% improvement in turnaround time

United States Patent and Trademark Office, USPTO Intern   5/2021 – 9/2021
Alexandria, VA

OCIO Operating Unit, Trademark Systems Division
- Collaborated with the technical lead of the website development project for the USPTO Trademark Systems division to conduct peer review and enhance the quality of the Trademark Systems Division's main website repository
- Participated in the development and enhancement of an experimental fork within the website's repository, utilizing HTML, CSS, and TypeScript to implement innovative features and improvements
- Observed and actively participated in daily scrum meetings, while also assisting the Scrum Master with administrative tasks for agile sprints, including Jira task management and estimation of working hours allocation