LINYI (LINCOLN) GUO

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**SUMMARY**

Experienced quantitative software developer with over 3 years of expertise in quantitative finance, risk modelling, back-end software development and CI/CD pipelines. Highly skilled in Python, PySpark, SQL, Bash and DevOps with proven track record of speeding up Bloomberg data read by 20s, reducing exposure by 3 billion CAD and improving efficiency by 30-50%. Strong communicator and strategic thinker, dedicated to lifelong learning and passionate about the quantitative finance field. Holds M.Sc. in Stat, B.Sc. in Math, FRM and certificates in ML, DS and Cloud Computing.

**SKILLS**

**SKILLS:** Back-end Software Development, DevOps, ETL Development, Quantitative Analysis, Risk Management, Time-Series Modeling & Analysis, Pricing Modeling, Algorithmic Trading, Statistical Machine Learning

**CODING:** Python, Spark, Redis, Kafka, SQL, NoSQL, R, SAS, Git, Bash, Docker, KDB+, C++, MATLAB

**TOOLS:** AWS, Azure, Airflow, Beacon, Eclipse, Unix, Docker, Power-BI, Tableau, Github, Algo, Jira, Bitbucket, Confluence

**WORK EXPERIENCE**

**Software Engineer, GBME, Scotiabank - Toronto, ON 2024.05 - Current**

* One of the key ICs for developing and maintaining back-end codebases and databases for the whole GED and FI team
* Deploy new APIs to enhance GED dataflows and improve front-end GUI to support daily trading/pricing activities
* Develop Redis caching into most FI data pipelines and integrate the service with the job scheduler successfully
* Building Kafka streaming pipelines for FI to speed up data consumption and improve high-frequency bond trading
* Responsible for production support, routine release, infra update, config change and access control

**Quantitative Analytics Manager, GRM, Scotiabank - Toronto, ON 2021.11 - 2024.05**

* Conducted and optimized SACCR & IMM model, with accumulated decrease in exposure of 3 billion CAD
* Developed and implemented 25k+ Python, PySpark and SQL lines, reducing running time and manual workload by 30 - 50%
* Performed and monitored Monte Carlo simulations of risk metics (including PFE, EAD, VaR, etc) under diverse scenarios
* Programed Stress Testing calculation and produced model documentations, with the cooperation of cross-functional teams
* Created dashboards to automate monitoring and reporting processes, and enhance quant analysis and productivity
* Developed and deployed robust data validation rules and orchestrated monthly code release with IT support

**Statistical Programmer, Everest Clinical Research Company - Toronto, ON 2021.05 - 2021.10**

* Implemented 10k+ SAS, Python, PySpark and SQL lines to produce formatted, precise, and validated statistical TLGs
* Executed clinical trial database quality and integrity checks, leveraging TLGs for data review and cleansing
* Formulated SDTM database specifications, and programed and performed quality control of SDTM and ADaM datasets
* Maintained documentation of data and programming procedures in alignment with Corporate Governing Documents

**PROJECTS**

**Seasonal Adjustment Research, Analysis and Forecasting - Ottawa, ON 2018.09 - 2020.08**

* Deployed hidden Markov models (HMM) and Bayesian analysis, reduced MSE by 25% for the US unemployment data
* Cooperated with Statistics Canada, and applied HMMs to national retail sales data to better detect and interpret trends
* Simulated 5000+ time series data using Monte Carlo Markov model (MCMC) across R, Python, PySpark and AWS
* Optimized HMMs by fine-tuning parameters and adopted parallel computation to accelerate the training process by 80%

**EDUCATION**

**FRM, Global Association of Risk Professionals 2021.11 - 2023.11**

**M.Sc. in Statistics (4.0/4.0), University of Ottawa – Ottawa, Canada 2018.09 - 2020.08**

**B.Sc. in Mathematics (3.7/4.0), Zhengzhou University – Zhengzhou, China 2014.09 - 2018.07**