**James Song, CFA**  
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**SUMMARY**

Innovative Senior Software Engineer & Quantitative Analyst with 15+ years of experience across global banks (Bank of America, Wells Fargo, BMO) and top technology firms (Google, Meta). Expert in Python development for risk technology, quantitative analytics, and large-scale data pipelines. Strong hands-on background in VaR, stress testing, counterparty credit risk, P&L reporting, collateral management, and cash prediction models. Experience with C++ (Google), Python (Meta & banking), SQL/NoSQL, Databricks, AI/ML, Azure, and trading systems (Calypso, Murex, Endur, Summit, Imagine). Recognized for academic excellence (Dean’s Scholarship, Math Olympiad) and proven track record of delivering scalable frameworks and high-impact quant/data solutions.

**CORE COMPETENCIES**

* Python Development: Quant models, risk engines, analytics/reporting frameworks, data pipelines
* Risk Technology: VaR, Stress Testing, P&L, Counterparty Credit Risk
* Market Data & Trading Systems: Bloomberg, Reuters, Calypso, Murex, Endur, Summit, Imagine
* Data Engineering: Trillion-Record Pipelines, Databricks, SQL/NoSQL, AI/ML
* Cloud & Infrastructure: Azure, Grid Computing, Google Borg Testing Framework
* Financial Instruments: Derivatives, Fixed Income, FX, Structured Products
* C++ Development & Tooling (Google Borg Framework, performance-critical systems)
* Team Leadership, Mentoring, Agile Delivery

**PROFESSIONAL EXPERIENCE**

**Google – Senior Software Engineer Jul 2022 – Dec 2024**

**Sunnyvale, CA**

* Tech lead for Borg testing framework, owning roadmap and codebase.
* Developed migration strategies for AI test features, improving scalability.
* Investigated and resolved high-impact Borg production issues (2022–2023).
* Used C++ (95%) for framework development; applied Python (~5%) to build custom automation and support tools for downstream engineering teams, enabling faster test execution and deployment pipelines.
* Mentored junior SWE across Development and Engineering Productivity teams.

**Meta (Facebook) – Data Engineer Oct 2019 – Feb 2022**

**Menlo Park, CA**

* Used Python exclusively for data engineering and analytics solutions.
* Designed and implemented end-to-end pipelines processing trillions of records daily across FB, Instagram, and WhatsApp.
* Developed Python-based ETL frameworks integrating SQL/NoSQL backends with distributed compute platforms.
* Built KPI dashboards and monitoring systems for executive and product analytics.
* Optimized legacy Python data workflows, reducing runtime and infrastructure costs.
* Partnered with ML teams to integrate Python-based analytics modules with AI models for engagement and performance tracking.

**Wells Fargo – Senior Consultant (Interest Rate Options Desk) Apr 2018 – Sep 2019**

**Charlotte, NC**

* Developed Python quant libraries for daily P&L, counterparty credit risk, and risk sensitivity analysis.
* Built stress testing scripts in Python to support derivatives portfolios.
* Automated hedging analytics for gamma portfolios, streamlining trader decision-making.
* Connected Bloomberg/Reuters data feeds into Python risk and pricing models.
* Delivered Python reporting tools to provide traders with intraday views of exposures.

**Bank of America – Trading Floor Quant (Global Funding Desk) Sep 2013 – Nov 2017**

**Charlotte, NC**

* Designed and implemented Python applications for EOD P&L, VaR, collateral management, and IBS (international balance sheet & cash prediction).
* Built grid-computing Python frameworks for large-scale simulations and scenario testing.
* Automated regulatory and internal risk reporting with Python/SQL integrations.
* Delivered front-office Python tools for pricing, scenario analysis, and collateral optimization.
* Worked closely with traders to rapidly deliver Python-driven analytics solutions on demand.

**Bank of Montreal – Market Risk Technology Sep 2007 – Oct 2012**

**Toronto, ON**

* Built Python risk reporting modules for P&L attribution, VaR, and stress testing across all asset classes.
* Developed Python scripts to validate and reconcile risk numbers from trading systems.
* Automated stress testing scenarios in Python, integrating results into enterprise dashboards.
* Enhanced risk infrastructure by introducing Python-driven analytics pipelines with SQL backends.

**EDUCATION**

**Master of General Management** – Millsaps College, Jackson, MS

* Awarded **Dean’s Scholarship**
* Summer intern at Merrill Lynch

**Bachelor’s Degree (Top 5 Chinese University)** – Graduated at age 19

**ACHIEVEMENTS**

* **CFA Charter holder**
* **China Math Olympiad Prize Winner**
* Early career recognition for **academic and analytical excellence**