

Jack Bennett

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SUMMARY

- Versatile engineer and problem solver with a focus on back-end Python, real-time/streaming data processing and transformation, and data science and analytics.
 - Proven skills in complex technical problem solving, quantitative analysis, written and verbal communication and documentation, and cross-disciplinary teamwork.
 - Experienced and skilled in a range of programming languages; modern development tools, platforms, and best practices; scripting and automation; multi-platform networked environments; relational databases and other datastores.
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SELECTED TECHNICAL SKILLS AND QUALIFICATIONS

Programming languages: Python, Lua, C, bash, JavaScript

Web frameworks: Flask, Django

Databases/Datastores: SQLite, MySQL, PostgreSQL, SQLAlchemy, Redis, Apache Kafka

Streaming/Messaging/CEP: RabbitMQ, AMQP, FIX and proprietary binary protocols, Tibco Streambase

SCM/Version Control: git, subversion, Perforce

Virtualization: vagrant, VirtualBox; AWS, Linode, DigitalOcean deployment and administration

Collaboration/Communication: Trello, GitLab, GitHub, Pivotal Tracker, WordPress, Trac, L^AT_EX

Analytical/Mathematical: Jupyter notebook, R, Mathematica, Maple, Matlab

Playing and Hacking: Clojure, Rust

PROFESSIONAL EXPERIENCE

- **Senior Software Engineer**, Potamus Trading LLC (Boston, MA), 2012–present
 - Serve as senior software engineer on Securities Operations team, working on trade log analytics, clearing and settlement, accounting data.
 - Develop data-transformation systems to convert FIX and binary trade data logs into real-time data streams, OATS compliance data formats, Geneva portfolio accounting system files.
 - Manage team including one other engineer, designing datastore for efficient and searchable trade log archive.
 - Real time stream parsing and analytics of FIX logs to enable visualization in Streambase framework, custom web frameworks, and other tools.
 - Develop automation processes in Python, Lua, and bash to enable pre-market, trading day, and post-market processes to execute without human intervention.
- **Software Engineer**, InsightSquared (Cambridge, MA), 2011–2012
 - Design data processing tools in Python using Django framework to perform generalized extract-transform-load (ETL) operations on customer data gathered from external APIs (Salesforce.com, Bullhorn, and other data sources).
 - Design web application front end pages using Python (Django framework), and JavaScript, for customer data analytics, data integration, and visualization, including sales forecasting, goal tracking, and others.
- **Contract Programmer**, Various clients, Cambridge and Boston, MA, 2010–2011

- Design custom Web scraping and quantitative analytics tools using Python; design flat-file data model for sorting and aggregating results
 - Automate Web browsing and data collection using XPATH expressions and templates to identify web page elements of interest and to cross-check with reference data.
 - Experimental parsing project using Python adaptor to Twitter web services API (REST API) and OAuth authentication protocol
 - Experimental distributed computing projects using Python (principally Parallel Python module and multiprocessing module).
 - **Associate, Portfolio Management & Risk**, PhaseCapital LP (Boston, MA), 2007–2010
 - Research, create, and test novel trading strategies for automated high-frequency stock trading
 - Build market data feed handlers for high-volume market data (tick data) in Python and C++, and interface with Streambase platform via adaptors (parsing continuous 15-20 Mbit data stream in real time).
 - Create trading strategy back-test harness and real-time trading system module in Python, to translate filtered market data into trading decisions for individual stocks. Communicate with other modules using custom Python socket networking library.
 - Build and operate automated systems for US equities, performing trading decisions on volume up to 7.5 million shares per day.
 - **Associate Software Engineer**, Hitachi Data Systems (Waltham, MA), 2006–2007
 - Design new classes, modules, and packages for shared Python libraries used for remote control, installation, and communication with an in-house product laboratory consisting of content-addressable archive clusters running Java software on a custom Fedora Linux-based platform.
 - Maintain, extend, and refactor legacy code libraries consisting of Python, Perl and shell scripts.
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EDUCATION

- Ph.D., Electrical and Computer Engineering, Brown University (Providence, RI)
- M.A.Sc., Electrical and Computer Engineering, University of Toronto
- B.A.Sc. (honors), Engineering Science - Physics Option, University of Toronto