Troy Zimmerman

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Summary

Accomplished software engineer specializing in cross-asset trade management and risk analysis systems with exemplary interpersonal skills. Capable of handling the pressure of a trading environment while delivering robust systems and providing top-notch support. Hands-on experience modeling credit, volatility and interest rate derivatives using distributed systems.

Experience

2008–Present   **Senior Software Engineer**, *Citadel, LLC*, Chicago, IL.

Lead the development of a flexible, graph-based asset price and risk calculation framework in Python which provides end-of-day and real-time prices and risk metrics for a variety of credit, volatility and interest rate products. In addition to providing historical risk reporting for the fundamental and systematic businesses, this framework is also used interactively by quantitative researchers and portfolio managers for ad hoc valuations of OTC assets.

Assisted with the development of a resource-aware job scheduling system capable of scheduling tens of thousands of jobs distributed across hundreds of machines.

Developed a parallel regression test harness which reduced test run-time from days to hours and improved model delivery schedules.

Exposed many of the firm-wide C++ libraries as Python modules using Boost which paved the way for making Python-based web services a firm-wide standard.

Member of the Python Steering Committee within the firm that works towards standardizing our Python distribution, increasing code sharing between teams, and introducing lectures and other learning experiences by Python experts from around the world.

Nearly a decade of experience mentoring summer interns and recent graduate hires through production-quality projects on six-month rotations (known as the "FTAP" program). Accompanied the campus recruiting team on-site at various North American universities to conduct technical interviews of rotation candidates.

2007–2008   **Senior Software Developer**, *UBS O'Connor*, Chicago, IL.

Coordinated the integration of the straight-through processing infrastructure and price feeds with SunGard's *FRONT ARENA*. Implemented custom reports and user interfaces using *Python*, *ACM*, *ADFL* and *C++*. Developed middle-ware components transforming messages between *AMB* and *Java* message queue brokers in *C*. Integrated proprietary models with the *FRONT ARENA's* own pricing extensions. Educated front and back office users on advanced usage and best practices.

2003–2007   **Software Developer**, *UBS O'Connor*, Chicago, IL.

Lead the design and development of real-time trade management and reporting system delivered through a tiered architecture. The client was built with *Eclipse RCP* as a collection on reusable plug-ins while the server was implemented in *Java* and utilized *CORBA*, *JDBC*, *JMS* and *RMI*. The open-source FIX engine *QuickFix* was embedded with support for FIX versions 4.0 through 4.4. Users were capable of defining extensions using the *Java Scripting API* and *Pnuts*, a dynamic scripting language based on the *Java* platform. Integration with vendor products such as *FutureTrade* and *TradingScreen* were provided via drop-copy messaging.

2001–2003 **Consultant**, *UBS O'Connor*, Chicago, IL.

Provided global, around-the-clock support of a proprietary trade management system to front and back office users. Certified new and upgraded existing FIX connections with various trading venues. Performed troubleshooting of automated trading strategies driven by S-Plus analytics. Developed an IOI aggregation, reporting and signaling tool. Technologies included *Perl*, *Java*, *C++*, and the *Qt* toolkit.

2000–2001 **Consultant**, *Lucent Technologies – Public Safety Systems*, Lisle, IL.

Assisted with the migration of the 9-11 public safety access point infrastructure from Xenix to Red Hat Linux. Responsible for updating comprehensive technical documentation, maintenance of the development environments, and extensive regression testing. Technologies included *C*, *Perl* and LaTeX.

Technological Expertise

Languages
- Python
- C, C++
- Bash, Ksh
- HTML, JavaScript, CSS

Tools
- cvs, svn, git
- gcc, gdb, valgrind
- TIBCO, AMPS, ICE
- STL, Boost, NSPR
- ASE, Redis, MongoDB, HDF5
- Numpy, Scipy, Numexpr, Pandas

Financial Knowledge

Asset Classes
- Options, Futures (singles, index)
- CDS (singles, index), Corp/Conv Bonds
- IRS (vanilla, basis), Treasuries

Trading Strategies
- Convertible Arbitrage
- Relative Value
- Layoff

Hobbies & Interests
- Health and wellness enthusiast
- Animal rescue volunteer
- Urban farming and sustainable living