

SUMMARY

Senior Software Engineer with 23 years of experience developing applications, project leadership, performance tuning, process improvements, troubleshooting, and debugging. Proven career track record of delivering fast, clear, smart code—exceeding requirements—and ensuring scalability and performance. Former Member of ISO C++ Standards Committee, including SG14 Latency study group, and one of the earliest recipients of the Gold [c++] badge on stackoverflow.com.

EDUCATION & TECH SKILLS

Education: Computer Science, Minor in Mathematics Programs, Indiana University of Pennsylvania, 1995 - 1999

Operating Systems: Linux, Windows, OSX, Solaris, IOS, Many Embedded Systems

Languages: C++ (incl. C++17/20/23), Python, C, C#, MIPS Assembly, x86 Assembly, and Bash Scripting

Methodologies: TDD, Functional, OOP, Multithreading, Refactoring proficient

Dev Software: CLion, VS Code, Visual Studio, Xcode, NetBeans, emacs, Docker

Hardware: x86, x64, ARM, MIPS, SPARC, PowerPC

Testing Tools: GDB, valgrind, gprof, VTune, FlexeLint, runtime compiler-supplied sanitizers, unit tests everywhere

PROFESSIONAL EXPERIENCE

Old Mission Capital, Senior Developer

Chicago, IL (hybrid) 2023

Quantitative market maker and systematic trading firm.

- Recruited and tasked to develop firmwide C++ multithreaded server with network interface to cache and supply static and real-time Bloomberg data, track individual user permissions, data expiration, and alternate field names—resulting in a faster, more reliable, and less costly service for supporting 150+ end users

Non-compete period

2022 - 2023

Verition Fund Management, Senior Developer

New York, NY (remote) 2021 - 2022

Multi-strategy, multi-manager hedge fund.

- Recruited and tasked to reduce latency issues littered throughout the firm's C++ financial software—worked with end users to identify issues and understand product requirements—identified and dealt with significant bottlenecks; increasing reduction rate by 90%+ (pending delays) while also implementing tools to enhance continuous integration practices for ongoing updates

Aquatic Capital Management, Development Engineer - Infrastructure

Chicago, IL (hybrid) 2020 - 2021

Quantitative investment trading firm.

- Promoted, becoming one of two core developers that built, managed, and supported the firm's fully automated C++/Python trading pipeline:
 - Broker communication / Venue communication (Primarily FIX)
 - Successfully updated many functions—order tracking, balancing, canceling, and redistributing—significantly increasing user experience and back-end efficiencies
- Innovated new interprocess protocols (TCP/UDP)—boosting system consistencies and reliability
- Asked by management to represent Aquatic as member of ISO C++ Committee (WG21)—continued role throughout tenure
- C++20 engine / Python 3 tools and UI

Thomson Reuters / Refinitiv, Lead Software Engineer - Core Framework Team

Oak Brook, IL (on site) 2016 - 2020

Financial content, data, and technology provider.

- Arranged, taught, and led popular weekly internal lecture series on Modern C++ and best practices—generating a fun, high energy environment that spawned collaboration and idea sharing
- Maintained and supported core framework codebase (C++11/C++17)—leveraged by multiple venues across the globe
- Lead “best practices” objectives regarding code safety, consistency, build stability, speed, and source control reliability—showing up frequently in code reviews—received stellar quarterly reviews by senior directors
- Designed highly-efficient “Just in Time” LLVM real-time compilation of domain-specific language—delivering 20× speedup

Algo Innovations, Lead Developer

Chicago, IL (hybrid) 2014 - 2016

Patent-holding provider of real-time financial information and audio broadcasts.

- Implemented an entire AJAX/HTML5 web platform and server software in C++17 involving real-time news feeds, U.S. equity exchange market data (processing and tracking 6,800+ stocks in real-time—time and sales, volume, bid/ask quotes), user management, worldwide payment processing, voice synthesis, social media (Twitter “X” and Stocktwits), public-facing ZeroMQ APIs, and responsive design—resulting in further securing intellectual rights, boosting brand awareness, generating prospective client conversations, and providing 2 new revenue channels—quickly capturing 100’s of subscribers and 5 API clients

Jump Trading, Senior Core Software Developer

Chicago, IL (on site) 2011 - 2013

Global high frequency trading firm.

- Mapped out and developed firmwide mission-critical applications and services for Jump’s core software infrastructure
 - Collaborated with quant teams and traders for designing, building, and maintaining risk management solutions that tracked P&L’s and plethora of alert parameters, in real-time
- Savvy, heavy use of Boost libraries, TCP/IP, concurrency, communication between Linux/Windows
- Readily supported multiple in-house teams as the “go-to” person for obscure C++ questions and language details

Ovation Studios, Lead Developer

Chicago, IL 2009 - 2014

Multimedia presentation services.

- Leveraged Linux for innovating a multithreaded C++11 / boost / GTK, “face recognition” presentation software solution
 - The entire company was based on this software—using an intuitive UI, the end user could easily scan photos, capture video images, news clippings, and written messages—automatically cutting out photos and clippings, rotate images correctly, organize them in a balanced way, then create a DVD showing the content with gentle pans, fades, and smooth transitions—all synced to music of choice

Tradelink, Senior Programmer Analyst

Chicago, IL 2007 - 2009

Proprietary trading and investment advisory firm.

- Spearheaded the sizable project of updating the firm’s decades-old internal trading applications by developing a low-level GUI framework that performed 20+ times faster and significantly more reliant—eventually becoming the primary framework that supported 70% of the firm’s proprietary software applications
- Leveraged C++, Python, and various scripting techs within a Solaris environment for building a product suite of custom, innovative trading tools, order tickets, and data displaying applications—quickly becoming the favorite, intuitive, “go to” solutions that supported 30+ traders

Midway Games, Senior Programmer

Chicago, IL 2000 - 2007

Leading developer and publisher of interactive entertainment software for major video game systems.

- Developed real-time, computation-heavy logical and graphical solutions using C, C++, MIPS4 Assembly, and x86 Assembly within a variety of programming environments—implemented in 12+ gaming products found globally
- Saved approximately \$1.2m+ dollars in commercial middleware solutions by designing and writing a graphics pipeline that supported multiple platforms, CPUs, and GPUs—eventually utilized within 40% of Midway’s commercial products

