MATTHEW JOHNSON MA (CANTAB) PHD

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LEADING ARCHITECT AND ENGINEER IN IIOT & HIGH-PERFORMANCE ANALYTICS

Experienced and driven software professional with 15+ years' expertise in development, architecture, and team leadership specializing in high-performance, multi-threaded micro-service-based platforms. Driving strategic direction and leading feature development for product and leading an R&D transformation to a hybrid cloud containerized CI practices. Looking to make a difference in a tech leadership role, solving problems that matter, and working with a lively and enthusiastic team.

KEY CAPABILITIES

15y C++ inc C++20 | 15y Python | 20y Java | Full SDLC | Performance and Security | Proprietary DSL Compiler creation & optimization | C | SQL | Linux/Windows Sysadmin/Devops | AWS | Docker | Kubernetes | Git | Github | Ansible | Gitops | Shell Scripting | Copilot/OpenAI | Agile (Scrum & Kanban) | Design Thinking | Software Architecture | Product Design | Leadership | Mentoring & Development | Hiring and onboarding | Technical Writing and Presentation

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PROFESSIONAL EXPERIENCE

Senior Architect, Cumulocity Gmbh   **Jan 2025 – present**
https://www.cumulocity.com/

Architect leading designs for the data ingestion, management and analytics in best-of-class IIOT platform. Technical lead for features across multiple agile teams, including senior development and review roles. Planning and architecture roles extend across multiple product and management areas.

Specific Achievements:

- Responsible for successful transition of R&D infrastructure to independent business
- Expert supporting performance, security and cloud modernization across the organization
- Cross-product architecture lead for rearchitecting the input processing layer for the platform.

Principle Software Engineer, Software Architect, Software AG   **July 2013 – Dec 2024**
https://www.softwareag.com/en_corporate/platform/iot.html

Architect leading designs for the core high-performance streaming analytics engine. Experienced C++, Java and Python engineer leading a team to design and deliver features including senior development and review roles across multiple agile teams. Leading system administration for R&D systems including on-prem, containerized and hybrid-cloud. Technical recruitment interviews, new hire onboarding and mentoring.

Specific Achievements 2019-2024:

- Personally ran a complete R&D infrastructure rebuild and recovery for the Apama team after a significant cyber attack, restoring productivity and the ability to deliver customer fixes faster than the rest of the company.
- Lead and implemented a devops transformation for R&D to hybrid cloud and containerized IaC in Kubernetes and AWS using gitops workflow.

Specific Achievements 2014-2016:

- Concepted, designed and delivered declarative, multi-threaded, multi-language and multi-platform Python-based build system (github.com/xpybuild) to unify product builds.
- Replaced build and fix delivery system.
- Wrote an automated performance analysis tool for monitoring and improving product performance.
- Designed and built in-process connectivity and integration for the platform, reducing latency and improving deployment architecture.

Specific Achievements 2017-2018:

- Lead a project to update compilers and platforms to move to modern C++ Language features.
- Added containerized deployment for the product to enable customer migrations to cloud.
- Proposed, designed and delivered Python integration to the proprietary DSL to support ML/AI.

Senior Software Engineer, Progress Software   **May 2008 – July 2013**

C++, Java and Python developer on world-leading, high-performance, multi-threaded realtime streaming analytics platform. Delivering features on time and with high quality and debugging tricky concurrency and performance issues in the platform.

Specific Achievements 2008-2010:

- Designed and built an interactive debugger for the proprietary DSL.
- Proposed, built and delivered Java extensions to the DSL.

Specific Achievements 2011-2013:

- Designed and built declarative stream-based language extensions to the proprietary DSL and underlying runtime.
- Delivered a compiled backend for the proprietary DSL using LLVM for high-performance language execution with benchmarks similar to natively-compiled C++ and Java.

EDUCATION

Doctor of Philosophy, Trinity Hall, University of Cambridge   **2004 – 2008**
Field: Computer Science, Thesis Topic: Consumer Security Devices for Internet Banking
Master of Arts, Trinity Hall, University of Cambridge   **2001 – 2004**
Computer Science Tripos

PATENTS

Second-order tuning of spin loops
US9262233B1   **Issued Jan 2016**
Multi-user in-memory queue for multi-threaded and/or multi-process computing architecture
US2024012645A1   **Issued Jan 2024**

PUBLICATIONS

A Real-World Application of Secure Multi-Party Computations   **Apr 2008**
Presented at the 16th International Workshop on Security Protocols   2008-JohnsonOwen-duplimate.pdf
A New Approach to E-Banking   **Oct 2007**
Presented at the 12th Nordic Workshop on Secure IT Systems   2007-Johnson-ebanking.pdf
Usability of Security Management: Defining the Permissions of Guests   **Apr 2006**
Presented at the 14th International Workshop on Security Protocols   2006-JohnsonSta-Guests.pdf

ORGANIZATIONS/PROJECTS

UK Magic Officials Ltd   **Dec 2023 – present**
Founded an organization to train and support tabletop game officials   https://magicofficials.uk

Magic: The Gathering Level 3 (Premier) Tournament Judge   **Dec 2012 – present**
Responsible for managing teams of judges at the highest level tournaments across the world and for local judge development within the program.   https://blogs.magicjudges.org

English Bridge Union Congress A Tournament Director   **Apr 2009 – present**
National tournament and rules expert responsible for running bridge tournaments across the UK.
Certified by the European Bridge League as a National Tournament Director   https://www.ebu.co.uk

Xpybuild   **Feb 2017 – present**
Co-authored a fast, cross-platform, cross-language Python-based build system   https://github.com/xpybuild

dbus-java   **Dec 2006 – Jan 2010**
The Java binding for the dbus system bus on Linux   https://dbus.freedesktop.org

Debian   **Dec 2006 – Jan 2011**
Debian Developer, designed and built the Java packaging framework   https://www.debian.org