ANDREW CHARNESKI

Principal Software Engineer

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Executive Summary

Principal-level Software Engineer and Systems Architect with over 20 years of experience delivering robust, high-performance solutions for Fortune 500 companies. Expertise in full-stack development (Java/Kotlin, TypeScript/React), distributed systems, and cloud infrastructure (AWS). Proven ability to lead complex projects, mentor teams, and drive significant performance improvements, such as reducing service load by 90% at HBO. A passionate open-source contributor and creator of innovative developer tools.

Core Competencies

- **Systems Architecture**: Designing scalable, resilient, and high-performance solutions for complex problems in big data, distributed computing, and web services.
- **Full-Stack Development**: Expert in building and maintaining enterprise-grade applications using Java/Kotlin/Spring on the backend and TypeScript/React on the frontend.
- **Performance Engineering & Optimization**: Deep expertise in JVM tuning, database optimization, and architectural refactoring, delivering up to 90% efficiency gains.

- **Cloud & DevOps**: Extensive experience with AWS, CI/CD pipelines, containerization (Docker/Kubernetes), and infrastructure as code (Terraform).
- **Technical Leadership & Mentorship**: Proven ability to lead development teams, establish best practices, and mentor engineers to improve quality and productivity.
- **Open Source Development**: Author and maintainer of 70+ open-source repositories, demonstrating a commitment to high-quality, well-documented, and thoroughly tested code.

Professional Experience

Senior Software Engineer
Grubhub

Oct 2018 – July 2025
Remote/Westerville, OH

- Engineered Agentic AI Systems: Designed and built agentic AI systems using LLMs for automated troubleshooting and operational intelligence.
- Full-Stack Tooling: Architected and built a full-stack developer tool (React/TypeScript, Kotlin/Spring) that uses LLMs to analyze Jenkins build failures, reducing MTTR for developers.
- JVM Performance Optimization: Improved performance of critical JVM services through in-depth profiling, GC tuning, and code optimization.
- CI/CD & Deployment Automation: Built a custom deployment orchestration tool for complex multi-stage deployments, featuring automated rollbacks and audit trails, improving deployment reliability.
- Open Source Contributions: Contributed production patches to Apache Ranger and Azkaban, enhancing security and workflow scheduling capabilities for the enterprise.

Technical Consulting
Expedia Inc

Oct 2014 – Oct 2018
Seattle, WA

- Led the cloud migration of big data infrastructure, architecting the transition from on-premises Hadoop to AWS/Qubole.
- Designed and developed a new generation of Expedia's ads targeting system, a high-performance real-time data service (TP95 <5ms) using Scala, Redis, and Apache Storm to process ~10k transactions/sec.
- Created novel data analytics tools and workflow optimization systems, including tools to analyze Hive scripts and provide graphical data flow graphs.
- Provided technical leadership for a team of 5 developers, establishing best practices and leading design efforts.

Technical Consulting
Amazon.com

Nov 2016 – Feb 2017
Seattle, WA

- Led the productionalization of a prototype Java web service for decision support and automation, including design review, refactoring, and deployment.

Technical Consulting
HBO Code Labs

Dec 2013 – Sep 2014
Seattle, WA

- Reduced CPU/memory load by 90% on large-scale web services through architectural improvements and production debugging.
- Developed sophisticated static code analysis tools based on Eclipse's Java AST to support large-scale code cleanup and review of a Spring web services application.

Technical Consulting   April 2011 – Nov 2013

Various (Consulting)   *Seattle, WA*

- Plugged-In Technologies: Created a cross-platform video conferencing app using Java/C for real-time video streaming.
- Big Fish Games, Inc: Developed an Android video game streaming client using Java and ffmpeg.
- Serials Solutions: Implemented new Java data services based on Hibernate, Cassandra, and Thrift.

Team Lead and Architect   2010 – 2011

Distributed Energy Management   *Bremerton, WA*

- Led a team of six, designed a high-performance data service and analytics platform for time series data using Java, Python/Jython, and Berkeley DB.

Senior SDE   2009 – 2009

Marchex   *Seattle, WA*

- Designed a MySQL partitioning service and maintained a GWT web application.

SDE II   2007 – 2009

Amazon.com   *Seattle, WA*

- Provided technical leadership, created a distributed real-time data reporting service, and developed Apache httpd C modules for routing and security.
- Developed real-time DDoS detection and response systems.

Software Engineer   2005 – 2007

Aristocrat Technologies, Inc   *Las Vegas, NV*

- Developed C# .NET commercial business applications for the gaming industry.

Software Engineer / Intern   1998 – 2004

Early Consulting/Internships   *Various*

- Roles at Hanson Truss, The Lannert Group, NRNDesigns.com, iCyt Visionary Bioscience, Texas Instruments, and Lucent Technologies, working with C++, AutoLISP, Java, and web technologies.

Publications & Open Source

- **QQN: A Quadratic Hybridization of Quasi-Newton Methods for Nonlinear Optimization** *(Publication)* – Formal paper detailing the QQN algorithm.
- **Test-Driven Development for Neural Networks** *(Publication)* – A two-part series establishing methodologies for unit testing and A/B testing in AI development.
- **Geometric Symmetry in Deep Texture Generation** *(Publication)* – Article detailing the mathematics behind symmetric neural art.

Technical Skills

Languages:
Java (20+ years, Expert - JVM internals, concurrency, performance)
TypeScript/JavaScript (15+ years, Advanced - React, Node.js, full-stack)
Python (10+ years, Advanced - Data processing, ML, automation)
Kotlin (5+ years, Advanced - Spring Boot, coroutines)
Scala (8+ years, Proficient - Akka, functional programming)
C/C++ (15+ years, Proficient - Systems programming, performance)
SQL (20+ years, Expert - Query optimization, database design)
Go, Rust, C# (Working knowledge)

Cloud & Infrastructure:
AWS (EC2, S3, EMR, Lambda, DynamoDB), Google Cloud, Azure, Qubole
Distributed Systems (Apache Hadoop, Spark, Storm)
GPU & Parallel Computing (CUDA, OpenCL, Multi-GPU orchestration)
Kubernetes (Deployments, scaling, monitoring, Helm)
Docker (Multi-stage builds, optimization, security scanning)
CI/CD (Jenkins, GitHub Actions, GitLab CI, ArgoCD)
Monitoring (Prometheus, Grafana, ELK stack, Datadog)
IaC (Terraform, CloudFormation, Ansible)

Development Practices:
Methodologies (Test-Driven Development (TDD), Agile, CI/CD)
Tools (Git, Maven, Gradle, Jenkins, Jira, Docker)   Techniques (Static code analysis, Performance profili
Open source contribution and maintenance

Education

University of Illinois at Urbana-Champaign
Bachelor of Engineering in Physics · Minor in Mathematics