David Elkind

Principal Software Engineer | Distributed Systems | Observability | Low-level

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> *David is a true renaissance man of the software industry: combining deep intrinsic knowledge of systems with hands-on creativity and the ability to communicate complex subjects to technical and non-technical audiences."*
>
> *— James Kirk, Director, Solutions Delivery, Aternity*

Summary

20+ years of software industry experience spanning hands-on systems architecture, technical leadership, and deep innovation across startup and enterprise environments. M.Sc. Summa Cum Laude. Holder of 4 registered patents and co-author of a peer-reviewed publication in a tier-1 scientific magazine (*eLife*).

Technical Expertise

Systems & Low-Level Programming

• Low-level system programming and kernel development (Win32, Linux, assembly x86/ARM)

• Bytecode instrumentation (Java, .NET) and runtime monitoring systems

• OS internals, device drivers, and kernel-mode programming

• High-performance distributed systems, concurrency, multithreading

• Network stack implementation and performance optimization

Observability & Cloud Architecture

• Application Performance Monitoring and distributed tracing

• Agent development across multiple runtimes (.NET, Java, Python)

• Scalable cloud-native architecture (Kubernetes, microservices)

• Real-time analytics and stream processing (Apache Flink, Kafka)

Modern Development & AI

• AI-assisted development (ChatGPT, Grok) for code generation and optimization

• Machine Learning & Deep Learning (PyTorch, Keras, Detectron2)

• Computer Vision & Natural Language Processing

• Rapid prototyping, reverse engineering, technology evaluation

Platforms & Technologies

• Languages: Assembly (x86/ARM), C, C++, Java, Python, C#/.NET, JavaScript

• Agent Development: Runtime instrumentation, bytecode manipulation

• Platforms: Linux, Windows, macOS, Android, iOS, ARM, x86

• Cloud: Kubernetes, Apache Flink, Kafka, OpenTelemetry, Prometheus

- Specialties: Low level programming, TCP/IP stacks, security, DRM systems

Leadership & Innovation

- Technical leadership across distributed global teams

- Full-stack product development and enterprise architecture

- 4 registered patents, 1 peer-reviewed publication (eLife Journal)

Languages Spoken

- English (fluent), Hebrew (fluent), Russian (native)

Current Position

Principal Engineer | Consulting Member of Technical Staff, Oracle Corporation (2017-Present)

- Contributing architect for cloud-native OCI monitoring platform processing over 300GB/hour.

- Designed .NET monitoring agent with bytecode instrumentation for low-overhead tracing.

- Built Python monitoring agent prototype to expand platform coverage.

- Implemented bytecode instrumentation for low-overhead Java application tracing.

- Designed and implemented internal health monitoring systems for distributed microservices architecture.

- Integrated OpenTelemetry and Prometheus data into the product.

- Developed streaming analytics components using Apache Flink and Kafka.

- Leveraged AI tools like ChatGPT and Grok for coding acceleration and optimization.

- Mentored engineers across global teams in California, Netherlands, India, and China.

Past Positions

Founder & CTO, Decode Systems Ltd (2006-2008, 2013-2017)

- Designed and implemented hybrid computer vision and deep learning system for real-time fall detection with edge pre-processing and cloud DNN classification.

- Designed cloud-based content mediation platforms for ISPs, enabling high-throughput data processing at scale.

- Architected and built an ultra-low latency framework for forex trading systems at major banks, allowing business logic to be implemented in Java atop a high-performance foundation.

- Implemented cyber-attack detection systems and DRM modules for media protection and anti-piracy.

- Developed low-level virtualization modules (sandboxing) and mobile hot-patching platforms for iOS and Android.

- Conducted iOS internals research for automated testing solution vendors.

- Delivered end-to-end architecture and technology solutions for clients ranging from startups to Fortune 500 enterprises.

Director, Product Management, Limelight Networks (2013-2014)

- Led product roadmap and strategic planning for Limelight Orchestrate Performance platform serving web optimization market.

- Conducted competitive analysis and market research to identify technical differentiation opportunities in CDN and performance space.

- Collaborated with engineering teams to define technical architecture and implementation priorities for performance monitoring solutions.

- Bridged technical and business teams to align product capabilities with enterprise customer requirements and market trends.

Chief Technology Officer, Aternity (2012)

- Led the corporate CTO office, setting technology strategy and driving the company's vision for end-user experience monitoring solutions.

- Owned corporate IP and patents strategy, identifying and protecting key technological innovations to maintain competitive advantage.

- Defined and validated key technology enablers and led the adoption of innovative techniques to strengthen Aternity's market position in APM space.

- Engaged directly with strategic customers and partners to identify critical requirements and new product capabilities for enterprise-scale deployments.

- Directed beta programs for advanced monitoring technologies and coordinated organizational response to competitive threats.

- Worked closely with Product Marketing to articulate technology positioning and craft technical messaging for analysts, customers, and partners.

Director, R&D, Aternity (2010-2012)

- Led full product lifecycle for the Aternity monitoring agent deployed across 500K+ enterprise endpoints globally.

- Managed 3 specialized engineering teams (20+ engineers) focused on low-latency data collection and real-time performance analysis.

- Architected and delivered scalable monitoring infrastructure processing millions of events per day from enterprise applications.

- Improved product quality dramatically, reducing customer-impacting issues from 10 cases per week to single digits per quarter.

- Enhanced incident response capabilities, decreasing MTTR from days/weeks to hours through improved processes, monitoring and diagnostics.

- Contributed to strategic planning as key member of executive R&D team, defining technology vision and market positioning.

Chief Architect, Director of New Technology, Aternity (2008-2010)

- Led research and prototyping of breakthrough monitoring capabilities, including application flow tracing and performance bottleneck detection.

- Identified and evaluated emerging technologies in APM space, maintaining competitive advantage through early adoption of innovative monitoring techniques.

- Designed reference implementations for next-generation monitoring features that became core product differentiators.

- Contributed to strategic planning as key technology advisor, defining multi-year product architecture roadmap.

- Established technical standards and architectural patterns adopted across all product development teams.

Core Technology Lead and Senior Architect, Identify Software Ltd (Acquired by BMC Software) (2000-2006)

- Designed and developed BlackBox technology, enabling unobtrusive runtime execution flow tracing across Win32, Win64, and Linux platforms.

- Architected cross-platform monitoring solution supporting COM/DCOM, .NET applications, and distributed transactions in heterogeneous enterprise environments.

- Led team of 8 software engineers and managed product-wide infrastructure development, establishing architectural standards adopted company-wide.

- Designed and implemented continuous build and integration system, improving development velocity and code quality across distributed teams.

- Coordinated global development efforts, including successful collaboration with offshore R&D teams and Technical Support organizations.

- Created technology platform that became core IP asset in BMC Software acquisition, demonstrating commercial value of innovative monitoring solutions.

Consulting Team Lead, Gravity Computing Systems Ltd (1997-2000)

- Led specialized systems programming consulting practice serving enterprise software development companies across full project lifecycle.

- Delivered critical low-level solutions including kernel drivers, network protocol implementations, and security systems for mission-critical applications.

- Built runtime tracing technologies, packet filtering systems, and file system drivers enabling advanced monitoring and security capabilities.

- Managed team of expert developers and provided deep systems debugging support for complex production issues requiring OS-level expertise.

- Built foundation expertise in systems internals and performance optimization that became core competency of the company.

Education

Master of Science (M.Sc), Computer Science, The Open University of Israel, 2022

- Graduated *Summa Cum Laude* with GPA 96
  - Thesis: "Automated cell counting using deep neural networks, analyzing 537 murine brain samples"

  - Applied PyTorch, Keras, and Detectron2 to build computer vision pipeline

  - Applied Python data science stack to perform quantitative analysis on the collected cell data

  - Published peer-reviewed research in eLife Journal

Bachelor of Science (B.Sc), Computer Science, The Open University of Israel, 2006

- Graduated *Cum Laude* with GPA 93

Patents & Publications

- Four registered patents in software and monitoring technologies.

- Published a peer-reviewed article in eLife Magazine.