

# Joshua P. Elson

## Technology Executive & Strategic Advisor

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### EXECUTIVE SUMMARY

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Technology executive, entrepreneur, and strategic advisor with 25+ years of experience spanning enterprise architecture, cloud communications, applied mathematics, and AI-driven innovation. Founded FluentStream Technologies in 2010, designing and building the platform from the ground up, and led the company through its acquisition by Providence Strategic Growth in 2018. FluentStream was subsequently acquired by Ooma, Inc. and today operates as part of a publicly traded communications company. Since 2020, has provided fractional CTO, technology strategy, and AI advisory services to organizations across telecom, SaaS, and emerging technology sectors. Recent consulting engagements include architecting a high-volume telephony platform processing over 200 million calls per month for one of the nation's largest market research and polling operations. Combines deep technical fluency—from writing a custom SIP stack in Rust to designing LLM architectures and applying advanced mathematics—with the business acumen of having built, scaled, and exited a venture-backed company.

### CORE COMPETENCIES

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AI/ML Strategy & Implementation	Cloud-Native Architecture	Product & Platform Strategy
Founding & Scaling Companies	Telecom & UCaaS Systems	M&A, Due Diligence & Exits
Real-Time Systems & VoIP	Data Engineering & Analytics	Vendor & Partner Management
Applied Mathematics & Modeling	Security & Compliance	Agile & Lean Engineering Culture

### TECHNICAL PROFICIENCIES

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**Cloud & Infrastructure:** AWS, GCP, Azure, Kubernetes, Docker, Terraform, serverless and event-driven architectures, multi-region high-availability design

**AI & Machine Learning:** Large language models, RAG pipelines, vector databases, ML model training and deployment, prompt engineering, AI agent architectures, Python, TensorFlow, PyTorch

**Telecom & Real-Time Communications:** VoIP, SIP, WebRTC, RTP/SRTP media handling, Asterisk, FreeSWITCH, custom SIP stack development in Rust, UCaaS/CCaaS/CPaaS platforms, carrier interconnection and SIP trunking, TDM-to-IP migration, real-time media processing, call routing engines

**Software Engineering:** Rust, Python, JavaScript/TypeScript, Node.js, React, Go, C/C++, Ruby, REST and GraphQL APIs, microservices and event-driven architecture, PostgreSQL, Redis, RabbitMQ, Kafka

**Mathematics & Quantitative Methods:** Applied mathematics including real analysis, linear algebra, and numerical methods; statistical modeling, optimization, queuing theory and Erlang models for call center capacity planning, time-series analysis, Monte Carlo simulation

**DevOps & Engineering Practices:** CI/CD via GitHub Actions and Jenkins, GitOps, infrastructure-as-code, observability with Datadog, Prometheus, and Grafana, Agile/Scrum, SOC 2 Type II, HIPAA

### PROFESSIONAL EXPERIENCE

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#### 5060 Solutions

June 2020 – Present

*Founder & Principal Technology Consultant*

Denver, CO

Technology advisory firm providing fractional CTO, AI strategy, and platform architecture services to growth-stage and mid-market organizations across telecom, SaaS, and emerging technology sectors.

- Serve as fractional CTO and strategic technology advisor for companies navigating cloud migrations, platform modernization, and AI adoption
- Lead AI and ML advisory engagements including LLM integration strategy, RAG architecture design, intelligent automation pipelines, and AI agent development for enterprise workflows
- Architect cloud-native solutions on AWS and GCP, designing for high availability, cost optimization, and operational excellence across distributed systems
- Conduct technical due diligence for M&A transactions in the communications and SaaS technology space, evaluating platform architecture, technical debt, scalability, and team capability
- Advise telecom and UCaaS companies on platform architecture, SIP infrastructure optimization, carrier strategy, and next-generation product roadmaps
- Apply quantitative and mathematical modeling to client engagements, including capacity planning with Erlang models, predictive analytics, and financial modeling for technology investments

- Architected and scaled a high-volume outbound communications platform for one of the nation's largest market research and polling operations, engineering the infrastructure to handle over 150 million calls per month with peaks exceeding 200 million — spanning predictive dialing, real-time call analytics, carrier capacity management, and regulatory compliance
- Designed the distributed telephony architecture for massive-scale survey and polling campaigns, including intelligent call pacing algorithms, dynamic carrier route optimization, answering machine detection tuning, and real-time respondent data pipelines feeding into market research analytics platforms
- Built and managed respondent panel infrastructure including panel recruitment workflows, deduplication and fraud detection, quota management, incentive tracking, and panel health analytics to maintain response rates and data quality across millions of panelists
- Engineered multi-channel communications solutions for survey delivery across voice, SMS, email, and IVR — integrating with sample management systems to orchestrate contact attempts, manage opt-outs, and maximize respondent reach while maintaining TCPA and DNC compliance
- Diagnosed and resolved large-scale call deliverability challenges including STIR/SHAKEN attestation, carrier-level call blocking and labeling mitigation, caller ID reputation management, and traffic pattern optimization to sustain connection rates across hundreds of millions of monthly outbound attempts
- Consulted on the full market research technology stack: survey delivery systems, sample management, data weighting and statistical methodology infrastructure, respondent panel integration, and computer-assisted telephone interviewing platform modernization
- Consult on engineering team structure, hiring strategy, development process maturity, and technology roadmap development for early-stage through growth-stage companies

## **FluentStream Technologies**

2010 – June 2020

*Founder & Chief Technology Officer*

Denver, CO

Cloud-based business communications platform serving SMB and mid-market customers nationwide. Acquired by Providence Strategic Growth in August 2018. Subsequently acquired by Ooma, Inc., now operating as part of a publicly traded communications company.

- Founded and built FluentStream from concept to acquisition: conceived the product vision, wrote the initial codebase, recruited the founding team, and grew the company into a nationally recognized cloud communications provider
- Designed and built the core VoIP platform from scratch, including SIP call processing engine, real-time media handling, call routing and failover logic, multi-tenant provisioning system, and a self-service web portal for customer management
- Wrote a custom SIP stack from the ground up in Rust, delivering high-performance, memory-safe call processing capable of handling thousands of concurrent sessions with minimal resource overhead
- Engineered the telephony infrastructure layer: SIP trunking interconnection with tier-1 carriers, number management and porting automation, PSTN origination and termination, and 911 compliance
- Built a multi-tenant, high-availability platform targeting 99.999% uptime with geographic redundancy, automated failover, and real-time health monitoring across distributed infrastructure
- Applied mathematical modeling to telecommunications problems: used Erlang B/C formulas for capacity planning, queuing theory for call center optimization, statistical analysis for call quality scoring, and time-series forecasting for infrastructure scaling
- Drove full product lifecycle from roadmap through delivery: auto-attendants, hunt groups, call queuing with intelligent ACD, CRM integrations with Salesforce and HubSpot, mobile applications, and advanced call analytics dashboards
- Built and led a multi-disciplinary engineering organization spanning backend systems, frontend applications, telephony and VoIP, DevOps, and QA — fostering a culture of continuous delivery, automated testing, and infrastructure-as-code
- Managed the technology integration and transition through the PSG acquisition, including platform documentation, operational knowledge transfer, and engineering team retention through June 2020
- Implemented comprehensive monitoring and observability stack for real-time visibility into call quality metrics including jitter, latency, and packet loss, as well as system performance and customer experience KPIs

## **Catholic Health Initiatives**

September 2005 – 2010

*Enterprise Architect / Director of IT / Technical Consultant*

Denver, CO

\$8.6B, 72-hospital healthcare system with \$225M annual IT spend. Progressed through three roles of increasing scope and responsibility.

- Created the Enterprise Architecture discipline within CHI, establishing enterprise-wide technology governance, integration standards, and architectural decision-making processes across all technology domains
- Designed a nationwide technology governance model spanning Windows and UNIX servers, networking and unified communications, storage, identity management, and security — a model frequently requested by peer healthcare EA teams
- Trusted advisor to the CTO on strategic initiatives: Health Information Exchange, Service Oriented Architecture, datacenter consolidation, cloud computing evaluation, virtualization strategy, and business intelligence integration
- Significant contributor to CHI's five-year IT strategic plan, aligning technology investment with clinical and business priorities across a 700-person IT organization operating in 20 states
- Integrated Enterprise Architecture into the Program Management Office governance process, resulting in faster project execution, improved standards compliance, and stronger business-technology alignment
- Created CHI's business requirements and software development methodology, improving consistency and quality of internally developed applications
- Directed all IT operations for a 110-bed regional referral center in North Dakota: hired and managed a full IT team, delivered clinical applications on time and within budget

- Led major infrastructure modernization: converted flat network to VLAN architecture, deployed redundant Layer 3 switching, implemented enterprise wireless with 802.1X security, and consolidated servers by 15%
- Reduced operating expenses over 10% through hardware purchasing standardization, network circuit optimization, and outsourced print fleet management

## **Centura Health**

July 2000 – September 2005

*Enterprise Technology Architect / Lead Architect*

Denver, CO

18,000-user multi-hospital healthcare system. Progressed through four increasingly senior technical roles over five years.

- Advanced from Project Technical Consultant through Lead Desktop Management Architect to Enterprise Technology Architect, taking on broader scope and strategic responsibility at each stage
- Led large-scale enterprise software implementations for up to 12,000 users, including Epic Cadence/Hyperspace, Eclipsys, Cerner Millennium via Citrix, Kronos, and Lawson
- Completed multimillion-dollar Novell NDS-to-Active Directory migration, architecting a managed Windows XP environment for 5,000 workstations and reducing device TCO by 50% over two years
- Drove early datacenter consolidation and virtualization initiatives on VMware ESX, and led HIPAA-compliant security policy development across desktop and server platforms
- Developed custom automation and tooling in VB, C/C++, C#, KixTart, and Windows Script Host — including an 8,000-line automated desktop build system and AD provisioning tools saving \$18,000 annually
- Built in-house web applications using Microsoft .NET including C# and ASP.NET, delivering single sign-on and password synchronization solutions for disparate application environments

## **EDUCATION**

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### **Continuing Education: Management Science & Engineering**

Stanford University

*Concentration: Policy & Strategy*

### **Applied Mathematics – PhD Prerequisites**

Metropolitan State College of Denver

*Completed graduate-level prerequisites in real analysis, linear algebra, numerical methods, and differential equations in preparation for doctoral study in applied mathematics*

### **B.S., Management of Information Systems | Minor: Mathematics**

University of Colorado

*Summa Cum Laude*

## **HONORS, CERTIFICATIONS & AFFILIATIONS**

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Member, Healthcare Information Management and Systems Society

Member, Microsoft Healthcare User Group

Microsoft Certified Professional

Four-time recipient, University of Colorado Business School Dean's Scholarship for Continuing Academic Excellence

Member, Building Industry Consulting Service International

Elected University of Colorado Rocky Mountain Information Management Association Representative

Vice President and Founding Member, Beta Gamma Sigma Denver Area Alumni Association

University of Colorado Dean's List – seven consecutive semesters