

Adam Burns

Park Ridge, IL | 970-823-2652 | adam@adamburns.us | [linkedin.com/in/1adamburns](https://www.linkedin.com/in/1adamburns)

Professional Summary

Senior Software Engineer with 10 years of experience building scalable backend systems, AWS-native architectures, and production ingestion pipelines. Technical lead on modernization initiatives supporting mission-critical global publishing workflows at Amazon. Experienced in Kotlin, Java, Python, and serverless AWS ecosystems. Known for strong operational ownership, mentoring engineers, and delivering measurable improvements to system performance, reliability, and developer productivity.

Skills

Languages: Kotlin, Java, Python (FastAPI, Pandas, NumPy, SciPy), SQL, TypeScript, Angular
Cloud & Infrastructure: Amazon Web Services (AWS) — Lambda, S3, DynamoDB, SQS, Kinesis, Step Functions, CloudWatch, CloudFormation, CDK, Redshift; Serverless Architecture, Docker, CI/CD Pipelines, Git, Infrastructure as Code (IaC)

Backend Engineering: REST APIs, System Design, Distributed Systems, Microservices, Data Processing Pipelines, Elasticsearch, Observability & Monitoring, Incident Response

Data & Analytics: Metrics Pipelines, SQL Analytics, Dashboarding (Amazon QuickSight), Parquet, Geospatial Data Processing

AI & Automation: Retrieval-Augmented Generation (RAG), Agent Orchestration, LLM Workflow Automation, OpenAI/Anthropic/Gemini APIs, Prompt Engineering

Additional: C/C++, Embedded Systems, Hardware Prototyping

Professional Experience

Amazon - Software Development Engineer II

Remote | Sep 2020 – Present

Technical lead and backend engineer on AWS-native ingestion and content management systems processing thousands of files daily for global publishers.

- **Led the redesign of a mission-critical ebook asset ingestion platform**, consolidating bifurcated ingestion paths, modernizing legacy procedural code, and introducing extensible, polymorphic architectures; **reduced attribute development effort by 35%, increased ingestion throughput by 55%, and lowered support burden by 20%**.
- **Built a metrics and observability platform from scratch** (Lambda, S3, DynamoDB, SQS, Kotlin) with automated SQL aggregation pipelines (Parquet) powering a QuickSight dashboard — giving business teams actionable ingestion insights for the first time.
- **Served as the team's AI adoption lead**, evaluating and prototyping LLM-powered tooling, integrating AI-assisted workflows into engineering processes, and advising engineers on

production-safe usage; **built a CLI leveraging Amazon Q to automatically port legacy procedural code to Kotlin with comprehensive unit tests, increasing migration velocity by 75%.**

- **Owned production deployments and AWS infrastructure** using CDK, Lambda, S3, DynamoDB, Step Functions, Kinesis, and SQS, ensuring secure ingestion pipelines with encryption at rest/in transit and proper IAM access controls.
- **Actively participated in on-call rotations** (every 1–2 months), leading incident response, postmortems, and preventative fixes for ingestion and metadata processing systems.
- **Mentored 5 engineers and 2 interns** (both converted to full-time); guided an intern-led project that **reduced publisher onboarding from 5 days to under 1 day**. Conducted ~100 technical and behavioral interviews.

Amazon - Software Development Engineer I

San Luis Obispo, CA | Apr 2019 – Sep 2020

- **Consolidated two large legacy content management systems** into a unified stack (Angular, Kotlin, TypeScript), reducing server costs by ~60% and enabling a unified user experience.
- Implemented shadow-read integration patterns to safely migrate an asset ingestion search backend from a legacy platform to **Elasticsearch** with zero downtime.

Amazon - Support Engineer III

San Luis Obispo, CA | Jul 2018 – Apr 2019

- Delivered monitoring enhancements reducing production incidents. **Promoted to SDE I in under 8 months.**

Independent AI & Software Engineering Consultant

Remote | 2024 – Present

- Architected a modular **RAG platform** for enterprise document intelligence with agent-based orchestration and model-agnostic infrastructure (OpenAI, Anthropic, Gemini APIs). **Reduced manual processing effort by 70%.**

Agribile, Inc. - Software Engineer

Champaign, IL | Dec 2015 – Jun 2018

- Built a **real-time hail monitoring application** processing live radar data to alert 100+ farmers within 60 seconds, enabling insurance claim documentation.
- Developed scalable backend services in **Python** (Pandas, NumPy, SciPy) processing terabytes of agronomic model data. Optimized **PostgreSQL** and **MongoDB** query patterns for gigabyte-scale daily ingestion.
- Served as **Scrum Master** for a team of 8, improving sprint velocity by 15%.

CRETMO — Co-Founder & Lead Engineer

Champaign, IL | 2014 – 2018

- Co-founded a medical IoT startup; led hardware and software engineering including embedded firmware (C/C++), sensor processing, and Bluetooth integrations.
- Partnered with Mayo Clinic for clinical trials, resulting in a **granted U.S. patent (US10456078B2)** and peer-reviewed publications.

Education

M.S. Civil & Environmental Engineering | University of Illinois at Urbana-Champaign

Focus: Autonomous Systems & Robotics

Scholarship: Bill & Melinda Gates Foundation Scholar

Thesis: Developed an autonomous ground rover for agricultural sub-canopy sensing using LIDAR, RTK GPS, Computer Vision and Python.

B.S. Atmospheric Sciences | University of Illinois at Urbana-Champaign

CS Coursework: Data Structures & Algorithms, Distributed Systems, Object-Oriented Programming

Capstone: Developed interactive stereoscopic satellite imagery visualization software for NASA JPL (MISR Mission).

Publications

- Ground-Based Robotic Sensing of an Agricultural Sub-Canopy. *American Geophysical Union*
- Repetitive strain injury and manual wheelchair propulsion: An ergonomic analysis and development of an affordable wearable device. *2015 Applied Ergonomics Conference*