

SERGEI MELLOW

Senior Backend & Integration Engineer · Public-Safety Systems at National Scale

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PROFESSIONAL SUMMARY

Senior backend and integration engineer with over a decade designing, building, and operating public-facing REST APIs and data integrations for high-availability public-safety systems: 200+ state and federal agencies, 500+ production integrations, all in FedRAMP- and CJIS-compliant government cloud environments. Grounded in more than five years of full-stack product development across web and mobile before specializing in integrations. Owns services end to end across architecture, delivery, and production on-call; mentors engineers and reviews AI-generated code before it ships.

TECHNICAL SKILLS

- **Languages & Frameworks:** Java (Spring) · TypeScript · JavaScript · Ruby (Rails) · Python
- **Databases:** MySQL · PostgreSQL · DynamoDB · relational data modeling · raw SQL and via ORMs / DSLs
- **APIs & Integration:** OpenAPI / Swagger · REST API design · public API versioning · third-party & cloud data integrations · developer-documentation portals
- **Cloud & Infrastructure:** AWS (EC2, Lambda, S3, SES, SQS, IAM, ElastiCache, Route 53, Transfer Family) · AWS GovCloud · Kubernetes · Rancher · Terraform (IaC) · containerized deployments
- **CI/CD & Delivery:** GitHub Actions · TeamCity · Argo CD · progressive delivery (metric-based rollouts) · release management · pipeline migration
- **Observability:** Datadog · Grafana · Kibana · CloudWatch · PagerDuty
- **Architecture & Delivery:** Service-oriented & API architecture · TDD & test coverage · Agile / Scrum · PRDs, RFCs & post-mortems · production on-call
- **AI Tooling:** Claude Code · Gemini CLI · Ollama (local models) · agentic development workflows · AI-assisted code review

PROFESSIONAL EXPERIENCE

Mark43

Jun 2017 – Present

Senior Integration Engineer (Back-End)

Progressed since 2017 from full-stack and backend product engineering (Software Engineer I → II) to Senior Software Engineer, then Senior Integration Engineer, focused on systems integration since 2021.

- Architect and build versioned REST APIs (OpenAPI) for both internal front-end clients and external vendors and customers, powering records management (RMS), computer-aided dispatch (CAD), and digital-evidence systems for 200+ law-enforcement agencies; run multiple concurrent versions for partner integrations and the public developer portal documenting every endpoint.
- Deliver both large, custom integrations for individual agencies and generic, reusable integrations adopted across multiple customers, with 500+ instances running in production across Mark43 services, third-party systems, and AWS GovCloud in FedRAMP- and CJIS-compliant government environments.
- Develop and maintain the internal frameworks powering real-time product-to-vendor integration, all scheduled-job integrations, and the data-pipeline (ETL) tooling other engineers build on, plus an internal CLI used daily by integration engineers and solution architects.
- Define deployment architecture and manage a fleet of hundreds of on-prem Kubernetes clusters, from single-node to highly available (HA) multi-node deployments; automated fleet-wide TLS certificate renewal, eliminating expiration-related outages.

- Personally migrated two large codebases from Java 8 to Java 21, module by module with zero downtime, rewriting components that could not be ported as-is, and advised three other teams on their migrations; used AI tooling heavily to compress the effort from months to weeks.
- Led CI/CD pipeline migrations across multiple large codebases, helped drive observability platform transitions, and ship weekly-to-biweekly releases as release manager through QA, staging, and production.
- Provide years of production on-call (PagerDuty) for first-responder systems; configure paging-capable alerts, lead root-cause analysis, and author post-mortems.
- Partner with agency stakeholders and customer-success teams, including one of the largest metropolitan police departments in the country, to scope and ship features.

Main Street Computing

Mar 2015 – Jun 2017

Full-Stack Web Application Developer

- Built and maintained client-facing web applications end to end with Ruby on Rails, Node.js, and JavaScript / jQuery on AWS, plus cross-platform mobile apps (iOS and Android) with Cordova, practicing test-driven development throughout.
- Worked directly with clients in Agile teams (Pivotal Tracker, Trello, Asana) to turn requirements into shipped features.

PERSONAL PROJECTS

- **Self-hosted AI agent platform:** Always-on, Dockerized multi-model AI assistant running on personal hardware, with scheduled jobs and automatic model failover.
- **Cloud cost kill switch (Google Cloud):** Serverless guardrail that automatically disables high-cost AI APIs when budget thresholds are crossed.
- **NJ Playgrounds (nj-playgrounds.com):** Live full-stack app for finding and reviewing playgrounds across New Jersey (Ruby on Rails, PostgreSQL, Heroku).
- **Production server operations:** Personal GCP VM run for over a decade and upgraded in place through every Ubuntu LTS release from 16.04 to 24.04 with zero data loss.

EDUCATION

B.S. in Computer Science, University at Buffalo, The State University of New York (SUNY), 2014