

Andrew Rose

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SUMMARY

Full-stack software engineer with 4+ years building backend-heavy distributed systems in fintech. Solo-delivered the firm's largest third-party integration and grew a 40-microservice backend platform into shared infrastructure across HSA and 401(k) operations, and shipped customer and middle-office portals for plans managing \$15M+ in assets. Strong in API design, event-driven architecture, and CI/CD automation.

TECHNICAL SKILLS

Languages: Python, TypeScript, JavaScript, Java, PHP, SQL, C#

Backend: NestJS, Node.js, Express, GraphQL, Hasura, RabbitMQ, REST APIs, Microservices

Frontend: React, Next.js, Drupal

Data & Infrastructure: PostgreSQL, MSSQL, Docker, Docker Swarm, GitLab CI/CD, DigitalOcean (Droplets, Managed DBs, Spaces, Container Registry)

Practices: Distributed Systems, Event-Driven Architecture, API Design, CI/CD, Unit/Integration/E2E Testing (Jest), Agile

EXPERIENCE

Saturna Capital | Software Engineer Bellingham, WA • Jul 2022 – Present

- Solely designed and delivered the firm's largest third-party integration (**Finch payroll API**), automating biweekly payroll and demographic feeds for 401(k) recordkeeping across 50+ employer connections (scaling toward 300) and 100+ entities, eliminating ~2 hours of manual CSV preparation per employer per pay cycle and a recurring source of data-entry errors.
- Led design and development of multiple services within a **40-microservice backend platform** (NestJS, PostgreSQL, RabbitMQ, GraphQL/Hasura), extending it from a single HSA product into shared infrastructure that automates fund, performance, and payroll data feeds into 401(k) recordkeeping (Relius).
- Engineered automated trade execution, fund networking, and settlement for an HSA platform managing **1,700+ accounts and \$15M+ in AUM**, interfacing with NSCC/DTCC for trades and generating NACHA/ACH files for deposits and withdrawals to customer accounts at UMB.
- Shipped a self-service **SEP/SIMPLE employer portal** on the firm's customer-facing site (Drupal/PHP) that replaced a fully manual spreadsheet-and-email workflow across 25 plans, adding authenticated file uploads, automated transaction generation, and full audit history, cutting an estimated 10 hours of back-office processing per week.
- Built a **middle-office operations admin UI** (Next.js) enabling staff to manage accounts, ACH transfers, DTCC orders, and Finch connections, plus a watchdog monitoring, scheduling, and alerting service for the backend platform.
- Containerized three production Drupal sites into a **Docker Swarm** cluster with automated GitLab CI/CD pipelines, replacing manual multi-node SSH deployments with push-to-deploy workflows across staging and production.
- Replaced Morningstar with Lipper as the firm's fund-data provider, automating daily fund and monthly performance ingestion into downstream systems and surfacing fund and ETF performance on the public site, reducing licensing costs **~80% (from \$70K to \$12K annually)**.

Swinomish Casino and Lodge | AV/IT Technician II (promoted from I) Anacortes, WA • Jan 2019 – Jul 2022

- Administered 250+ employee accounts and 500+ network devices via Active Directory while maintaining enterprise network performance, security, and uptime.
- Automated Windows imaging, deployment, and system updates using PowerShell and Python, significantly reducing provisioning and update time.
- Led compliance-driven infrastructure upgrades and deployed/configured servers and switches to meet gaming-industry security standards.

PROJECTS

- **Algorithmic Trading Bot** — *Python, Alpaca API*. Autonomous equity trading system with historical-data backtesting and automated buy/sell order execution.
- **Personal Finance Assistant** — *Next.js, Node.js, PostgreSQL, Plaid API*. Full-stack app with secure bank-account linking, automated transaction retrieval, and expense categorization.
- **Dice Roguelike** — *Unity, C#*. Roguelike dice-combat game with procedurally generated maps and customizable dice-face mechanics.

EDUCATION

Western Washington University | B.S. Computer Science, Minor in Mathematics Bellingham, WA • Sept 2017 – Dec 2022