

Michael Poplin

Industrial & Systems Engineer | Financial Analyst | PhD Student, Montana State University
Salt Lake City, UT | 406.210.1838 | me@michaelpoplin.com
linkedin.com/in/michael-poplin1987 | ORCID: 0009-0000-5967-9829

SUMMARY

Industrial and systems engineer working at the intersection of healthcare finance, operational analytics, and engineering. Financial Analyst at Northeast Montana Health Services (a rural Critical Access Hospital system) under the CFO, with engineering responsibilities spanning Cerner integration, ERP and HR system integration, payer reconciliation, and operational reporting. Co-founder/CTO of Coincident Systems, the technical arm of Stelna Ventures; recently awarded a multi-year TechLink contract building web systems for DoD and VA technology commercialization. PhD student in Industrial & Management Systems Engineering at Montana State University.

EDUCATION

Montana State University, Bozeman, MT *In Progress*
Doctor of Philosophy, Industrial & Management Systems Engineering
Advisor: Dr. Bernadette McCrory, PhD, MPH, PE, CHFP. M.S. en route (expected May 2027).

Montana State University, Bozeman, MT *December 2025*
Bachelor of Science, Industrial & Management Systems Engineering; Graduated with Honors

PROFESSIONAL EXPERIENCE

Northeast Montana Health Services, Wolf Point, MT *July 2026 – Present*
Financial Analyst
Reporting to the Chief Financial Officer at a rural Critical Access Hospital system. Combined financial, systems, and industrial engineering scope.

- **Financial Analytics & Payer Reconciliation:** Medicaid and Medicare reconciliation, insurance and payer analytics, financial reporting and dashboard development for executive leadership.
- **Systems Integration:** Engineering work across Cerner EHR integration, ERP system integration, and HR system integration. Operational data flow between clinical, financial, and administrative systems.
- **Operational Reporting:** Report building and operational analytics infrastructure across hospital system operations.
- **Quality & Lean Initiatives:** Industrial engineering contribution to quality and Lean process improvement work across the system.

Coincident Systems, LLC, Bozeman, MT *October 2025 – Present*
Co-Founder & Chief Technology Officer

Software and web engineering firm and technical arm of Stelna Ventures, a Bozeman-based venture studio, building web and software systems for organizations in government, defense technology, healthcare, and other regulated industries.

- **TechLink Contract (DoD / VA Technology Commercialization):** Competitively awarded a multi-year contract to build web systems supporting the commercialization of federally funded DoD and VA technologies.
- **Engineering Leadership:** Set technical direction, architectural standards, and engineering practices. Hiring, vendor selection, and engineering management across the team. Stack spans Java, Python, TypeScript/Next.js, PostgreSQL, Docker, federated and cloud deployment.
- **Business Development & Customer Discovery:** 20+ structured customer discovery interviews via NSF I-Corps Regional. VentureWell E-Team Pioneer cohort. Pipeline development across federal, state agency, and commercial channels.

Montana State University, BioReD Hub, Bozeman, MT *August 2024 – May 2026*
Graduate Research Assistant

Graduate research assistantship in the BioReD Hub at MSU's College of Engineering. Operational analytics and statistical analysis across multiple research studies and federal grant initiatives.

- **Operational Analytics Platform:** Designed and built operational analytics platform with structured event records, longitudinal sustainability tracking, and cross-facility KPI benchmarking for the MSU-Montana Hospital Association Lean Rapid Improvement Event program (95+ events at 30+ Critical Access Hospitals).
- **Clinical Research Analytics:** Lead analyst on the KYMITT longitudinal patient outcome study at Billings Clinic. Statistical methods included regression, ANOVA, mixed-effects models, and Design of Experiments.
- **Signal Processing & Cognitive Research:** Built end-to-end EEG/ERP signal processing pipeline and PySide6 video slicer GUI for cognitive research under Dr. Nadya Modyanova. Outputs published in IEEE ACDSA 2026 and IISE Annual Conference & Expo 2025.

Columbia Care, Remote

April 2022 – February 2026

Systems Engineer

Ecommerce technical lead at publicly traded multi-state operator across 20+ retail locations in a continuously evolving regulatory compliance environment.

- **Ecommerce Platform Engineering:** AstroJS frontend deployed on Vercel; Node.js AWS Lambda services for B2B and CRM integration; Contentstack CMS for marketing tooling and campaign infrastructure. By time of departure, the platform had full end-to-end Playwright test coverage on GitHub Actions.
- **Operational Analytics & Reporting:** PostHog product analytics dashboards on HogQL joined with Snowflake; A/B testing infrastructure for the ecommerce platform; attribution and conversion analytics across paid and organic channels.
- **Product Recommender (MSU Capstone, Company-Sponsored):** Designed a product recommender system as an MSU College of Engineering capstone project and pitched it to the company, who agreed to sponsor my team. Apache Airflow ETL pipeline ingesting 3,000+ lab certificates of analysis via OCR; embedded chemistry profiles stored in pgvector-backed PostgreSQL (150K+ records); similarity-based product surfacing on the ecommerce platform.
- **B2B Integration:** CRM-to-ERP integration via Node.js AWS Lambda serverless functions; wholesale partner sync.
- **Cross-Functional Leadership:** Owned the stakeholder relationship between executive leadership and the engineering team. Translated business and product requirements into deliverable specifications. Led 3 engineers across US and India: code reviews, architectural guidance, mentorship, interviewing.

The Green Solution, Denver, CO

July 2016 – April 2022

Senior Developer

Senior developer at Colorado's largest independent retailer in regulated multi-location commerce. Ecommerce platform, point-of-sale, and customer-facing retail kiosk on a shared stack.

- **Platform Architecture:** Ecommerce on Drupal with a React + Redux frontend; Motaworks POS on Magento with vanilla JavaScript interface and PHP 7 cart service. Percona MySQL; Docker and Docker Swarm via Bamboo.
- **Cross-System Data Sync:** Designed and evolved a RabbitMQ message broker with Node.js services as the data sync layer across the store database fleet, central cloud server, and ecommerce. Consolidated state regulatory compliance, ERP (NAV Dynamics), point-of-sale, and retail operations into the integration layer. Database scaling through query optimization, stored procedures, and replication.
- **Customer Mobile App:** Built and shipped Green Lifestyle, the customer rewards and loyalty mobile application, end-to-end. Loyalty data layer built on stored procedures that I helped architect.
- **Analytics & SEO:** Owned the analytics layer; SQL-backed operational reports and dashboards in Google Data Studio. Server-side rendering reconciliation tooling for SEO on a JavaScript-heavy ecommerce frontend; WCAG 2.1 accessibility compliance.

Gaia, Inc. (formerly Gaiam TV), Boulder, CO

July 2013 – July 2016

Application Engineer

Full-stack developer on streaming media platform (100K+ subscribers) through company IPO. Drupal backends, React frontends, Apple TV app; vendor management of third-party content recommendation platform.

PUBLICATIONS

- Poplin, M., Hughes, M., McCrory, B., & Modyanova, N. (2026). "Achieving Sub-Frame Precision Speech Segmentation Through Computational Multimodal Analysis." IEEE ACDSA 2026.
- Poplin, M., Tafelmeyer, J., Riemann, L.A., Chamberlin, M., & McCrory, B. (2026). "Keep your move in the tube: An evaluation of longitudinal patient outcomes." HFES Health Care Symposium, New York.
- Poplin, M., Ma, J., Aviles Zuniga, T., Modyanova, N., Johnson, E. A., & McCrory, B. (2025). "Using EEG to Understand Learning Engagement with Human-Computer Interaction." IISE Annual Conference & Expo 2025.

TECHNICAL SKILLS

- **Financial & Healthcare Operations:** Medicaid and Medicare reconciliation; payer analytics; financial reporting and dashboard development; Cerner EHR integration; ERP and HR system integration; HL7 v2 ADT; healthcare operational data flow
- **Statistical & Research Methods:** Design of Experiments (factorial, fractional factorial, blocking, covariates); regression, ANOVA, mixed-effects models; hypothesis testing; statistical process control; gauge R&R; Lean and Six Sigma methodology; discrete event simulation; causal inference
- **Languages:** Node.js, Python (pandas, NumPy, SciPy, scikit-learn, PyTorch, FastAPI), Java, JavaScript/TypeScript, PHP, Elixir, R, SQL (advanced), Bash

- **Backend & Architecture:** REST API design, RPC patterns; Node.js + AWS Lambda; Java/HAPI FHIR; Python/FastAPI; Drupal; AWS Cognito; queues (RabbitMQ, Redis Streams); caching; async patterns; webhook and integration architectures; federated deployments
- **Frontend:** React, Redux, TypeScript, AstroJS, Next.js; server-side rendering; WCAG 2.1 accessibility
- **Databases:** PostgreSQL (pgvector, JSONB, stored procedures, query optimization, replication), MySQL/Percona, MSSQL-familiar, Snowflake, Redis; advanced SQL; star and snowflake schema design
- **DevOps & Testing:** Docker, Docker Compose, Docker Swarm; GitHub Actions, CircleCI, Bamboo; Playwright end-to-end testing; Vercel; AWS (Lambda, S3); Linux (Fedora daily driver); Git (advanced)
- **Analytics & BI:** Tableau and Power BI; Google Analytics, Google Data Studio, PostHog (HogQL); Snowflake-backed reporting; KPI definition and executive dashboards; A/B testing; attribution modeling
- **AI Engineering:** Anthropic Claude Partner Network member; daily Claude Code in development workflow; building on the Claude API; agentic plan-mode and REPL-style iteration; prompt engineering with code and schema context-loading; output verification; test-driven degradation control

CERTIFICATIONS & MEMBERSHIPS

- **Credentials:** Anthropic Claude Partner Network; Fundamentals of Engineering (FE, 2025); accumulating PE licensure credits; NSF I-Corps Regional (April 2026); VentureWell E-Team Pioneer (May 2026)
- **Memberships:** Tau Beta Pi (scholarship recipient); HFES; IISE; HFMA; SME (founding president, MSU student chapter); Alpha Pi Mu