

Michael Poplin

Bozeman, Montana

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Summary

Systems engineer and technical consultant with 15+ years of experience architecting and delivering scalable software solutions across healthcare technology, web infrastructure, and distributed systems. Recent B.S. graduate (December 2025) continuing in accelerated M.S. program in Industrial & Systems Engineering at Montana State University, with published research in neurotechnology and biomedical engineering. Proven expertise in full-stack development, data analytics, and cross-functional technical leadership with a track record of shipping production systems that drive measurable business outcomes.

Technical Expertise

Software Engineering & Architecture

Building scalable web platforms and enterprise systems that handle complex workflows and integrate with existing infrastructure

- Full-stack web development (Next.js, Astro, React, PHP, Node.js)
- Distributed systems design with microservices, RabbitMQ, WebSockets
- RESTful API design and third-party system integration
- High-performance database architecture and optimization (Percona SQL, PostgreSQL)
- Mobile application development (iOS/Android via Cordova)

Data & Analytics

Extracting insights from complex datasets to drive decision-making and optimize business processes

- ETL pipeline development and data modeling
- ERP system integration and automation
- Statistical analysis and DOE methodology
- Marketing attribution and revenue optimization
- Advanced signal processing and Fourier analysis

DevOps & Infrastructure

Managing production systems and deployment pipelines that ensure reliable, scalable operations

- Production deployment with Docker, Nginx, and serverless architectures
- CI/CD pipeline design and implementation
- Linux systems administration (Fedora, Debian)
- Python, Bash, and Ruby scripting

Research & Specialized Skills

Applying engineering principles to solve complex problems in healthcare and neuroscience

- Biomedical instrumentation and EEG/ERP analysis
- Healthcare systems optimization
- IoT development with C/C++
- Agile/Scrum project management
- Technical writing and presentation

Professional Experience

Partner & CTO | Stelna Ventures | Bozeman, MT

October 2025 - Present

Technical partner in founder-first venture studio backing first-time founders across Montana and the Mountain West.

- Building SaaS platform for Montana State University connecting alumni with graduating students; brought on as technical partner to scale beyond MVP stage
- Partnering with founders from concept through launch, providing hands-on technical co-founding support
- Driving technical due diligence and feasibility assessment for new venture opportunities
- Contributing to building a resilient entrepreneurial ecosystem across Montana and the Mountain West

Graduate Research Assistant | Montana State University BioReD Hub | Bozeman, MT

August 2024 - Present

Research engineer for Montana State University's Biomedical Innovation for Research and Development Hub (BioReD Hub), an interdisciplinary center advancing life-saving technologies through engineering, neuroscience, nursing, and computer science collaboration.

- Contributing to statewide trauma network proposal addressing Montana's rural healthcare access challenges (competing for Department of Health and Human Services \$50B rural health funding)
- Prototyping EMS coordination platform with real-time hospital capacity tracking and satellite communications
- Conducting statistical analysis and data processing for EEG/ERP neuroscience research on language impairment in autism and ADHD
- Developing Python-based automated speech segmentation system for EEG/ERP workflows; submitted to IEEE ACDSA 2026; open-source release planned
- Developing interactive game environment with child-friendly interface for behavioral and biometric data collection
- Contributing to post-sternotomy recovery protocol optimization research in partnership with Billings Clinic
- Authoring grant proposals for healthcare systems optimization and biomedical research initiatives
- Presenting interdisciplinary research findings at national conferences including Institute of Industrial and Systems Engineers (IISE) Annual Conference with live technical Q&A sessions

Systems Engineer | The Cannabist Company | Remote

April 2022 - Present

Technical lead for web platform serving publicly traded multi-state cannabis operator (\$385M revenue, 51 locations across 11 states).

- Architecting and deploying serverless, statically-built CMS integration serving multiple brand properties
- Leading team of 3 developers through full project lifecycle from requirements gathering to production deployment
- Serving as primary technical liaison with third-party vendors, translating business requirements into technical specifications
- Collaborating directly with SVP of Engineering and marketing leadership on platform strategy and roadmap
- Building analytics infrastructure for marketing attribution and revenue optimization

Senior Developer | The Green Solution | Denver, CO

July 2016 - April 2022

Lead developer for Colorado's largest independent cannabis retailer (\$80M+ annual revenue, 23 locations).

- Designed and implemented TGSColorado.com flagship web property and in-store kiosk experience
- Key contributor to Motaworks custom Point-of-Sale system powering all retail locations
- Co-architected RabbitMQ-based microservices platform enabling distributed system scalability
- Built and maintained Green Lifestyle mobile application (iOS/Android) using Apache Cordova

- Managed distributed development team including code reviews, technical mentorship, and hiring
- Partnered with executive team and department leaders to gather requirements and deliver high-impact solutions

Application Engineer | Gaia | Boulder, CO

July 2013 - July 2016

Full-stack developer on streaming media platform serving global audience.

- Led development of AppleTV streaming application from concept to production
- Built features and integrations for web platform using PHP and JavaScript
- Collaborated with product team on user experience optimization

Earlier Roles

Additional experience in web development: University of Kentucky, Able Engine, and eLink Design (2010-2013)

Education

Montana State University | Bozeman, MT

Bachelor of Science, Industrial & Management Systems Engineering (December 2025)

Graduated with Honors | GPA: 3.64

Tau Beta Pi Engineering Honor Society | TBP Scholarship Recipient

Master of Science, Industrial & Systems Engineering (In Progress)

Focus: Healthcare systems optimization, human factors and ergonomics, statistical modeling

Research Focus: Rural healthcare systems, biomedical instrumentation, neurotechnology

Flathead Valley Community College | Kalispell, MT

Associate of Science, Pre-Engineering (2020-2022)

Returned to complete engineering degree after 10+ years in professional software development

Publications & Presentations

Lead Author: Poplin, M., Ma, J., Aviles Zuniga, T., Modyanova, N., Johnson, E. A., & McCrory, B. (2025). "Using Electroencephalography to Understand Learning Engagement with User-Centered Human-Computer Interaction in a Multimodal Online Learning Environment." *Proceedings of the IISE Annual Conference & Expo 2025*.

[Presentation](#)

Presenter: Institute of Industrial and Systems Engineers (IISE) National Conference, Atlanta, 2025 - Presented EEG engagement modeling research and co-authored student-led projects with live Q&A sessions

Submitted: Poplin, M., Hughes, M., McCrory, B., & Modyanova, N. "Achieving Sub-Frame Precision Speech Segmentation Through Computational Multimodal Analysis: Bridging Neuroscience Requirements with Engineering Solutions." IEEE Artificial Intelligence, Computer, Data Sciences and Applications (ACDSA) 2026 (pending acceptance)

Submitted: Aviles Zuniga, T., Hughes, M.K., Poplin, M., McCrory, B., Wu, Y.C., Modyanova, N. (September 2025). "Investigating Semantic Integration of Gestures with Nouns in Neurodiverse Individuals via Event Related Potentials (ERP)." International Symposium on Human Factors and Ergonomics in Health Care. New York, NY. (Poster, pending acceptance)