Michael W. Estrin

Pragmatic Software Engineering Individual Contributor

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- 8+ years of Go experience; prior open-source contributor and maintainer.
- Over a decade implementing software as an individual contributor in product engineering.
- Experienced managing engineering teams and leading people (hire/fire with 3 to 12 directs).
- Introduced multiple organizations to agile processes and solid software engineering practices.
- Increased delivery cadence and implemented CI/CD pipelines to ship working software more often.
- Teammate-approved – see the "Recommendations Received" section of my LinkedIn profile.

Rumble Advertising Center Development at Rumble **10/2024 to 09/2026**

Hands-on development on a high-throughput real-time ad exchange (OpenRTB/VAST).
Go, JavaScript, Git, Docker, NATS.io, ClickHouse, Aerospike, MySQL, Prometheus, Grafana, Claude Code

- Built a distributed budget-enforcement system (NATS sharing protocol, atomic ledger) from proof of concept to production; later raised its throughput ~10x, fixing a ~30% revenue-per-impression drop.
- Rebuilt the OpenRTB DSP bid-request pipeline and delivered 100+ latency and memory optimizations on the millisecond-sensitive bid path, including a GC-reduction initiative.
- Built a VAST ad-pod packer for video and let campaigns serve across every compatible ad format.
- Eliminated ~50 races, deadlocks, and crashes; fixed critical budget-overspend bugs under load.
- Built click-fraud detection from scratch (CTR, click-timing, IP-rotation, datacenter/VPN rules), excluding fraudulent traffic from billing; delivered OpenRTB cookie sync and hardened server-side identity resolution.
- Fixed ~18 security vulnerabilities (SSRF, auth bypass, injection) and added CI vulnerability scanning; built a backpressured ClickHouse ingest layer that survives upstream outages.
- Led major Go, framework, and DB-client upgrades; added dependency automation and architecture tests.

Lead Research Engineer at Rumble **07/2023 to 09/2024**

Hands-on proof-of-concept development. Led research and development for a publicly-traded video platform.
Go, JavaScript, C, Git, Docker, Nginx, NATS.io, Gorse, Web Video, CDN

- Authored several research studies and proofs-of-concept leading to production 1-second live stream latency.
- Architected and implemented a proof-of-concept to distribute and scale live chat across multiple servers.
- Created proof-of-concept to demonstrate the feasibility of a log-file-based video recommendation engine.
- Implemented Nginx module to convert request's query parameter to an HTTP range header.
- Designed and implemented a proof-of-work-based challenge system to mitigate OSI Layer 7 DDoS attacks.
- Researched and proposed several technical approaches to mitigate video bandwidth theft.
- Created and proposed research map; established research agenda.

Principal Software Architect / Agile Process Lead at OnlineMedEd **04/2021 to 09/2022**

Lead technologist with hands-on development and technical leadership at a medical education company.
Go, PHP, PHPUnit, TDD, Git, Docker, Jenkins, Sonar, AMQP/RabbitMQ

- Authored Engineering Vision (people, process, and technology) adopted by Engineering management.
- Led reconceptualization, design, and proof-of-concept in Go of bespoke learning delivery system.
- Proposed, led, and delivered Platform in PHP – a standardized approach to micro service development.
- Initiated and led internal Software Development Governance Board to establish global standards.
- Created and launched a formal technical mentoring program; mentored 8 engineers at varying levels.
- Established technical knowledge and skill targets by career ladder level.

Strategic agile product development process leadership at a medical education company.
Scrum, Kanban, Lean Software Development

- Hired, managed, and led an Agile Coach to facilitate tactical process implementation.
- Led strategic transformation from Scrum to Kanban (on the way to Lean Software Development).
- Initiated and led internal Agile Process Governance Board to guide global product development processes.

Software System Senior Principal Engineer at Dell Technologies **11/2018 to 04/2021**

Technologist; led research – and participated in strategy development – on security, privacy, and trust for the Research Office, Office of the CTO, Products and Operations Division.

- Member of security strategy team and the team's interface to the research office.
- Defined related portions of the Office of the CTO research map and established research agenda.
- Defined studies and projects for research and strategy; executed – and led others to execute – research.
- Worked with global team (US, Canada, China, Egypt, Ireland, Israel).
- Coauthored 5 patent applications (4 granted to date).

Technical leadership and hands-on development on Project Alvarium for the Office of the CTO, P&O Division.
Go, Git, GitHub, IPFS, IOTA Tangle

- Contributed to internal (subsequently open-sourced) Project Alvarium data confidence fabric project:
  - Led small team to reimagine intern-created proof-of-concept as a flexible and extensible SDK.
  - Architected and implemented an extensible framework focused on capturing provenance annotations across data mutations and assessing those annotations to reach conclusions.

Hands-on development as maintainer of the Linux Foundation's EdgeX Foundry open-source project on the Dell IoT (Internet of things) Platform Development Team (a collaboration between Dell EMC and VMware).
Go, JavaScript, Bootstrap, Mongo, Microservices, Docker, MQTT

- Chaired EdgeX Foundry System Management Working Group from 11/2019 to 06/2020.
- Recognized by EdgeX Foundry Community with 2020 EdgeX Innovation Award.
- Built a Helm Chart and Kustomize-based Kubernetes manifests for EdgeX.
- Created a northside application service to integrate EdgeX with Amazon IoT, Azure IoT, and Dell Boomi.
- Contributed to the Linux Foundation's open-source EdgeX Foundry project:
  - Architected, implemented, and presented API 2.0 framework to Core Working Group.
  - Implemented extensible service bootstrapping library with simple dependency injection container.
  - Refactored system management agent and executor.
  - Added environment variable override support.
- Produced a new proof-of-concept surveillance application based on EdgeX and incorporating a Dell IoT gateway, a Dell network switch, multiple cameras, a temperature sensor, and a patlite for demonstration at the 2019 ISC West, Dell Technologies World, and IoT World shows.
- Co-presented a session at Intel Global IoT DevFest IV on the proof-of-concept surveillance application.

Principal Software Engineer at Scientific Games **04/2018 to 11/2018**

Hands-on development focused on server-side cross-game concerns at a mobile gaming company.
PHP, MySQL, Couchbase, PHPUnit, ActiveMQ, TDD, Couchbase, Git, Vagrant, Jenkins, Sonar

- Created a game-agnostic login service to manage player data and route clients to a country-specific data center.
- Led design and architecture of new canonical game server implementation.
- Built cross-game ActiveMQ-based server-side library to transmit analytics events to third-party systems.
- Decomposed a monolithic game server library to individual test-driven-developed composer-based packages.
- Implemented an internal Satis-based composer repository to host private composer-based packages.
- Crafted Jenkinsfile-based CI pipelines to execute tests, check Sonar quality gates, and deploy Satis repository.
- Trained software engineers on SOLID design principles, unit testing, and dependency injection.

Contract Software Development for Yokogawa **Contracted from 06/2017 to 04/2018**

Contract to enhance the custom CMS serving the company's product marketing sites (4-12MM views/month).
PHP, Laravel, JavaScript, Angular, MySQL, AJAX, Git, Docker, AWS S3

- Added shim to support multiple sites with different top-level domains from a single Laravel 4.2 installation.
- Created utility to identify/correct data inconsistencies across a complex schema missing referential integrity.
- Implemented geolocation-based redirection to ensure visitors received proper regionalized content.
- Added support to secure user-uploaded sensitive content on AWS S3 prior to publication.
- Replaced Google site search with Swiftype region-specific site search and auto-complete.

Vice-President, Development at Scrypt **01/2017 to 07/2017**

Hands-on engineering leadership for HIPAA-compliant messaging and document management SaaS products.
Python, JavaScript, Angular, Percona/MySQL, Git, Jenkins, Sonar, Docker, Swarm

- Led Stak and DocbookMD product teams to stabilize and enhance existing SaaS products.
- Resurrected DocbookMD development – reverse-engineered JavaScript builds from production artifacts; containerized DocbookMD; implemented branch-level Docker Swarm-based development, build, and test environments; and automated deployments to staging and production.
- Increased Stak production deployments from once every 6-to-8 weeks to 3-to-5 times per week.
- Steered development group through a 50% reduction-in-force after the sale of the company's Sfax product.
- Implemented Lean Software Development leveraging Kanban (LeanKit) and code review (GitHub).
- Trained software engineers on unit testing and dependency injection.

Contract Software Development for Distinct Software Solutions **Contracted from 08/2016 to 10/2016**

Contract to deliver new features for a golf course scheduling SaaS product by an October drop-dead release date.
PHP, JavaScript, jQuery, MySQL, PHPUnit, TDD, AJAX, Git, Vagrant

- Added features to manage fleets of golf carts, power trolleys, and rental clubs across multiple golf courses.
- Dynamically calculated and displayed golf cart and power trolley availability on tee time schedules.
- Refactored to simplify unit tests by adding factories for DAO, service, PDO, and controller objects.

Director of Software Engineering at Kinesis Survey Technologies **02/2013 to 05/2016**

Hands-on engineering leadership for online survey and panel management market research SaaS products.
PHP, Slim, JavaScript, Percona/MySQL, PHPUnit, Codeception, AJAX, Phing, Git, Jenkins, Sonar, Docker, Kubernetes

- Led software engineering team to improve SaaS-based products with 15-25MM views/month.
- Created a continuous integration (Jenkins), inspection (Sonar), and zero-downtime delivery build pipeline.
- Implemented Kanban (LeanKit), code review (RhodeCode), and source code control (Hg, Git).
- Refactored single-tenant product to a service-based, horizontally scalable, multi-tenant implementation.
- Spiked the next generation of the survey product using TDD and domain-driven design.

US-12314395-B2	Training Data Protection for AI Model in Partitioned Execution Environment
US-12255904-B2	Early validation of communication behavior
US-12216758-B2	Training Data Protection in Artificial Intelligence Model Execution Environment
US-12056232-B2	Function-based Service Framework with Trusted Execution Platform
US-20220207048-A1	Signal of trust access prioritization

Distributed Systems Design Fundamentals (2022)	**Particular Software**
Software Architecture Principles and Practices (2019)	**Software Engineering Institute – Carnegie Mellon**
Advanced Ultimate Go (2019)	**Ardan Labs**
React Coursework (2017)	**Udacity**
Certified Scrum Master (2011 – 2017)	**Scrum Alliance**
Zend Certified Engineer, PHP 5.3 (2010)	**Zend Technologies Limited**
Client-side Web Programming Certificate (2008)	**University of Illinois at Urbana-Champaign**
Bachelor of Science, Computer Science	**National University**