ERIN BURKE

AI PRODUCT ENGINEER

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KEY SKILLS

Frontend: TypeScript, React, Next.js, Redux, Tailwind CSS, Zustand
Backend: Python, FastAPI, Pydantic, Celery, Redis, SQLAlchemy, WebSockets, Node.js, REST APIs
Data: PostgreSQL, pgvector, S3, Pandas, NumPy, Alembic, DynamoDB, Celery, RabbitMQ, Elasticsearch
AI/ML: OpenAI API, RAG, fine-tuning, prompt engineering, evals, LLM orchestration, human-in-the-loop
Infra & Tools: AWS, Docker, GitHub Actions, Datadog, Git, Playwright, PyTest

PROFESSIONAL EXPERIENCE

Member of the Technical Staff, Norm AI - *LEAP (Legal Engineering Automation Platform)* **Sept 2024 - Dec 2025**

- Founding engineer building tools for domain experts to label data, provide human-in-the-loop feedback for AI agents + transform complex regulations into structured LLM representations.
- Designed, shipped, + iterated on AI-automated workflows for legal agent deployment teams, reducing client onboarding time by 70%.
- Optimized task queues and backend infrastructure using Celery, Redis, asyncio, S3 batching, and prompt caching, reducing processing latency by 40% and compute costs by 50%.
- Built custom evaluation benchmarks and validation datasets with regulatory domain experts, improving agent accuracy on document processing + compliance analysis.
- Led development of microservices in Python and FastAPI, scaling to thousands of concurrent tasks under p99 latency SLAs.
- Designed PostgreSQL schemas, indexes, query patterns for document metadata + compliance audit logs, maintaining performance at scale.

Full-Stack Engineer, Rapid7 - *Insight Cloud Security* **May 2022 - Aug 2023**

- Processed + visualized high-volume security event data (100K+ events/day) in customer-facing dashboards, designing efficient query patterns + data aggregation strategies
- Implemented client-side state management for complex security dashboard views using Redux, handling real-time data updates across 10K+ concurrent user sessions
- Drove adoption of feature flagging for progressive rollouts in a security-critical environment, enabling safe deployment of new detection rules to enterprise accounts

Associate Product Manager Intern, Atlassian - *Confluence-Jira Integration* **May 2021 - Aug 2021**

- Instrumented product metric pipelines using Amplitude, writing custom SQL queries to track feature adoption across 15K+ users
- Built internal analytics dashboards to surface real-time KPIs, reducing stakeholder reporting overhead by 60%
- Designed A/B testing framework with engineering, specifying event schemas and statistical significance thresholds for feature rollouts

RESEARCH EXPERIENCE

Memorial Sloan Kettering Clinic Team - *Harvey Mudd College* **Aug 2021 - May 2022**

- Collaborated with researchers + clinicians at Memorial Sloan Kettering to build 15+ data analysis and visualization tools for single-cell RNA sequencing workflows
- Built reproducible analysis pipelines processing high-dimensional data (20K+ genes × thousands of cells) using Pandas, NumPy, scikit-learn, and custom dimensionality reduction methods
- Designed eval frameworks validating cluster quality against known markers, establishing statistical baselines for anomaly detection

Combinatorics Research Assistant - *Claremont McKenna College* **Jan 2022 - May 2022**

- Modeled redistricting as a graph partitioning problem, implementing Markov Chain Monte Carlo sampling algorithms to explore exponential combinatorial state spaces
- Built full analysis pipeline in Python (NetworkX, NumPy, Matplotlib) computing transition probabilities via spanning tree theory and analyzing stationary distributions

EDUCATION

B.A. in Computer Science, Claremont McKenna College **May 2022**

Major coursework completed at **Harvey Mudd College**

- Relevant coursework in Applied Logic + Automated Theorem Proving, Computer Systems and Computational Creativity.