Joel Peckham

Software Engineer

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Summary

Software engineer with 3+ years owning production systems end-to-end at a health-technology SaaS platform serving 900+ hospices and 41,000+ active patients. Experienced across the full stack: third-party API integrations, high-traffic application performance, product delivery, and platform quality. Track record of measurable impact, including $154,000 in annual customer savings and cutting page load times in half on core clinical workflows.

Professional Experience

- **BetterRx** Remote
  Software Engineer (promoted from Junior Software Engineer, Mar 2025) *Jun 2023 – Present*

  Hospice pharmacy-benefit-management SaaS platform serving 900+ hospices and 41,000+ active patients.

  - **EMR/EHR Integrations**: Owned the platform's Electronic Medical Record / Electronic Health Record (EMR/EHR) integrations (Epic, MatrixCare, Careficient, HospiceMD), syncing patients, medications, and prescriptions between hospice records and the pharmacy via Surescripts. Built import jobs, OAuth token lifecycle management, rate limiting, retries with exponential backoff, and usage-based billing.
  - **E-Prescribing Workflow Rewrite**: Led a ground-up rewrite of the core e-prescribe (NewRx) workflow, the application's most-used clinical screen, re-architecting Livewire components, adding draft persistence and robust validation, reaching PHPStan level 8, and cutting over from the legacy implementation with zero clinical downtime.
  - **Therapeutic Interchange Product**: Designed and shipped a Therapeutic Interchange manager and reporting suite (data model, cached savings calculations, admin UI, and exports) that surfaces lower-cost medication alternatives and tracks realized savings, delivering $154,000 in annual customer savings.
  - **Performance Optimization**: Optimized the high-traffic RxQueue clinical screen, used across 900 hospices and 41,000+ active patients, with deferred loading, batched drug-warning checks, and caching, reducing Livewire payload sizes and cutting page load times in half.
  - **Reporting & Dashboards**: Built utilization and performance reporting (per-patient-day trends, cost breakdowns, org- and account-level goals) backed by cached invoice-aggregation tables that cut report page load times in half.
  - **UI Modernization**: Drove an app-wide layout and navigation rewrite, migrating legacy views to Flux/Tailwind components, replacing Chart.js with native charts, and adding a command palette and breadcrumbs.
  - **Platform & Quality**: Upgraded the stack (PHP 8.2, Node 18), authored custom PHPStan static-analysis rules, instrumented product analytics with Amplitude, and added security features including email-based multi-factor authentication (MFA). Authored 1,000+ commits across the codebase.

Skills

- **Languages**: PHP, JavaScript, TypeScript, Python, SQL, C, C++, C#, Bash
- **Backend**: Laravel, Node.js, Eloquent ORM, Drizzle ORM, REST APIs, OAuth
- **Frontend**: Livewire, FluxUI, React, Next.js, Alpine.js, Tailwind CSS, HTML, CSS
- **Data & Infrastructure**: MySQL, Redis, AWS (RDS, Secrets Manager, CloudWatch), Docker, Linux, Vercel
- **Testing & Quality**: Pest, PHPUnit, PHPStan, Playwright, Vitest, CI/CD (continuous integration/continuous deployment), Git

Projects

- **UWYO Schedule Planner (uwyoschedule.org)**: Full-stack University of Wyoming class-schedule planner that ingests the live course catalog and generates conflict-free weekly schedules around busy-time blackouts and instructor preferences. Includes scheduled catalog-ingest jobs, a shareable planner, and unit/end-to-end test coverage. Tech: Next.js, TypeScript, Drizzle ORM, Tailwind CSS, Playwright, Vitest, Vercel.
- **Neural Network Visualizer (jpeckham.com)**: Implemented a neural network from scratch in the browser (25 input nodes, variable hidden nodes, 10 output nodes) and lets the user watch it learn iteration by iteration. Tech: JavaScript, HTML, CSS.
- **GPT-Powered Stock Trading Research (jpeckham.com)**: Explored whether a transformer model could act as a news-based trading bot: scraped 90,000 news articles and trained a 6-billion-parameter model on Google's TPU Research Cloud. Tech: TensorFlow, JAX, Python, TPU.

Education

- **Bachelor of Science in Computer Science** Collegedale, TN
  Southern Adventist University *Aug 2018 – May 2022*