# Colin MacRae

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## Professional Experience

- **Protectly** **Remote (San Francisco, CA)**

  *Founding Engineer* *April 2025 - Current*

  *Led the rebuild of a Shopify shipping protection app from a branded single-tenant product into a multi-tenant platform, and brought it to market.*

  - Demoed MVPs directly to stakeholders and board members, gathered their feedback, and worked through where technical constraints conflicted with the board's product goals.
  - Led UX research sessions with high-volume merchants and turned the findings into UI and customer-experience changes.
  - Designed and shipped a white-label MVP end-to-end: subscription billing (webhooks, order metering, tier limits, reconciliation), conditional brand theming, Python backend business logic, Prisma, Remix, and email/messaging workflows.
  - Built Gorgias and Klaviyo integrations for in-ticket claim handling and claim-event email flows.
  - Consolidated 6 service repos into a monorepo to support multi-agent development workflows.
  - Migrated company's application infrastructure into the monorepo with plan/apply/drift-detection CI while reconciling infra drift in legacy Terraform.
  - Re-architected SQS message processing, cutting infra spend by ∼$4,000/yr and raising throughput 12x.
  - Drove a company-wide testing initiative from near-zero coverage: Vitest/RTL suites, Playwright E2E, real-flow integration tests, backend factories, and mutation testing, producing thousands of tests across 4 applications (frontend, backend, Shopify app, and Novu bridge).
  - Built internal and marketing tooling: custom MCP servers, agentic CI code review, UAT CLIs, CloudWatch instrumentation, and an agentic content pipeline that drafts Sanity CMS blog posts and TryPost social posts with Remotion-rendered media behind human approval.
  - Added CI security checks with Dependabot and Gitleaks, plus scheduled package updates and agentic security reviews.
  - Tracked down and coordinated the fix for an integration bug between American Express and Stripe that had blocked payments from our highest-volume merchant for three months.

- **Homegrown National Park** **Remote (Boston, MA)**

  *Software Engineer (Volunteer)* *December 2025 - Current*

  *Worked with Homegrown's Executive Director, Director of Technology, and team of volunteers to modernize legacy map application.*

  - Designed and shipped a unified multi-organization admin membership system, consolidating member approval and cross-org visibility into a single "Manage Members" view, saving environmental organization administrators hours of weekly spreadsheet work.
  - Built shareable, deep-linked map markers and country-scoped address search for a biodiversity map serving 29,000+ users, using React and Mapbox GL over a geospatial data model.
  - Introduced the dev team to agentic development with Claude Code, covering token-budget and throughput best practices.

- **Horace Mann, Data Warehousing Team** **Remote (Springfield, IL)**
  *Software Engineer* *June 2024 - January 2025*

  *Worked with the warehousing team to clean legacy data sources and integrate them into the company's main cloud platform.*

  - Designed and implemented ETL data-ingestion pipelines for the enterprise data warehouse using Informatica IICS mappings and workflows orchestrated with PowerShell against SQL Server, plus Power BI dashboards over the warehoused data.
  - Modernized legacy on-prem ETL by migrating SSIS packages to cloud-native Informatica IICS and performance-tuning complex nested stored procedures, reducing tech debt and pipeline runtime.
  - Designed and implemented a reusable data-quality framework (IICS, dynamic SQL, PowerShell) that automated validation rules across ingested datasets, catching data issues before they reached downstream reporting.

## Skills

- **Languages**
  - Python, TypeScript, JavaScript, SQL, Bash.
- **Backend & APIs**
  - FastAPI, NestJS, REST & GraphQL APIs, SQLAlchemy, TypeORM, PostgreSQL, Redis, Novu
- **Frontend**
  - React, Remix, TypeScript, Mapbox GL, Shopify (Polaris, App Bridge, Admin GraphQL), Tailwind, shadcn, React Email.
- **Cloud, Infrastructure & DevOps**
  - AWS (ECS, RDS, WAF, SQS, CDN), GCP, Docker, Terraform / Atmos, nginx, GitHub Actions CI/CD, Sentry, CloudWatch.
- **Testing & AI**
  - pytest, Vitest, Playwright, mutmut / Stryker; LLM integration, MCP servers, Claude Code agentic workflows.

## Education

- **Master of Science in Computer Science**, *University of Illinois - Chicago* *May 2024*
- **Bachelor of Science in Computer Science**, *Florida State University* *May 2022*
- **Bachelor of Science in English**, *University of Puget Sound* *May 2018*