

Aaron Wood

SENIOR SOFTWARE DEVELOPER · PLATFORMS, APPLIED AI, PAYMENTS

aaron@3d.ca | 416-417-5897 | aaronwood.dev | github.com/SilicaGel | Newmarket, ON | Greater Toronto Area

SUMMARY

Software engineer with over 20 years of building systems end to end, the last seven inside a multi-tenant retail platform serving global luxury brands. I have built **two production platforms from nothing**: a provider-agnostic AI platform every product team now builds on, and before it a multi-provider payments layer. I am equally at home designing the architecture and demoing the result to a customer.

TECHNICAL SKILLS

LANGUAGES	PHP, Python, TypeScript, JavaScript, SQL, Bash
APPLIED AI	LLM platform architecture, Google Vertex AI and Gemini, structured output and response schemas, prompt design, evaluation and guardrails, multi-agent orchestration (Google ADK), MCP tool integration
BACKEND	REST API design, MySQL and MariaDB, schema design and migrations, RabbitMQ, job queues, multi-tenant architecture, distributed locking
DATA	BigQuery, warehouse query design against a CDC-fed analytics store, schema and data modelling
FRONTEND	React, React Native, TypeScript, Vite, responsive and accessible UI
INFRASTRUCTURE	Google Cloud Platform, AWS, Terraform, Docker, Kubernetes, CI/CD design, observability
PRACTICE	Code review at scale, mentorship, automated testing (unit, integration, end to end), customer-facing demos

EXPERIENCE

Senior Software Developer

Tulip

May 2019 – Present
Toronto, ON / Remote

- Senior Software Developer, 2020 to present · Software Developer II, 2020 · Software Developer, 2019 to 2020. Promoted twice within the first thirteen months.
- Multi-tenant clienteling and retail platform used by global luxury and specialty brands. PHP monolith, job queue services, React Native apps, BigQuery analytics.*
- **Designed and built the company's AI platform.** A provider-agnostic LLM gateway any service can inject, with per-tenant request logging, token-level cost attribution, retry and backoff, and response-schema enforcement. Calling code never names a vendor model, so a second provider drops in without touching it. The surfaces on top are mine too: AI customer summaries and customer preferences (v1 and v2).
 - **Designed and built the AI dashboard generator** on that platform. A plain-language prompt becomes a live analytics dashboard: the model emits a spec of BigQuery queries, computed fields and UI components, and 14 deterministic repair steps fix the mistakes models make repeatedly before a model call is spent on them. Validation runs those queries against the warehouse with test data, patches a single failing query in place rather than regenerating everything, and stops for a human decision when repair runs out. I wrote most of the renderer, on web, iOS and Android.
 - **Hardened the platform for production**, which is most of the work: malformed model JSON, per-model reasoning parameters, quota-rejection retries, keeping raw model text away from end users, a deploy-time guard for prompt-escaping errors, and per-tenant feature flags.
 - **Built the payments platform** before it: a provider-abstraction layer with Moneris, Givex and Stripe connectors, card-present terminal management with transaction-level locking to prevent double charges, and per-tenant transaction logging and health checks.
 - **The engineer other teams escalate distributed failures to**, including a RabbitMQ redelivery loop and a full-sync lock needing atomic acquisition with TTL renewal.
 - **Partner directly with senior management and product** on scoping and priorities, run live demonstrations for enterprise customers, and mentor through review: over 400 merge requests across eight repositories, 278 approved in the past year.

EXPERIENCE, CONTINUED

Tulip, Senior Software Developer (continued)

- **Built the message personalization system** on that platform: personas at three levels of specificity (employee, customer, and their relationship, most specific winning) that improve without training. When someone edits a generated message before sending, the system diffs generated against sent and evolves the persona from the delta, asynchronously. A shared style-tag glossary keeps the analysis consistent across runs.
- **Prototyped the multi-agent layer in Python:** a coordinator agent on Google's ADK that decomposes a request, delegates to specialist sub-agents and strips internal identifiers from the final response, plus agents wired to MCP tool servers.
- **Built an internal AI developer toolchain now used by teammates:** twelve tools covering ticket start-up, merge request review, reviewer-comment triage and generated feature documentation, plus one in progress that works a set of tickets concurrently. Every tool that writes to a shared system stops at a human approval gate.

SELECTED PROJECT

Darkwatch

2026

Solo-built production web application

Real-time session manager for a tabletop role-playing game. React and TypeScript, Node and MySQL, self-hosted. Over 1,300 commits in five months.

- Designed and built the whole system solo: schema, real-time state synchronization, authentication, image pipeline and component library.
- Built the delivery pipeline to production standards: 18 CI workflows covering parallel sharding across 168 Playwright specs, visual regression, performance budgets, supply-chain checks and nightly deploys.
- Built an agent-orchestrated development workflow of 19 custom automation skills that plan, implement, review and ship work in parallel, plus a reopen check that flags any issue reopened within seven days of close, the signature of a fix that satisfied the ticket but missed the intent.

EARLIER EXPERIENCE

Director of Technology

Nov 2013 – May 2019

snapped Inc.

Toronto, ON

Hands-on technical leader for a national community media company. Led a small team while personally designing and building the platform.

- Conceptualized, designed and built several large-scale custom web platforms end to end: schema design, a custom CMS built so non-technical staff could change exactly what they needed, and legacy data migration.
- Led the build of the new corporate platform: public APIs for third-party integration, the back-end services behind the custom iOS and Android apps for ticket scanning and photo upload, and ticket pricing logic.
- Wrote software that automated the graphic design team's workflow, saving each designer more than eight hours a week.

Developer

Jan 2010 – Nov 2013

snapped Inc.

- Built custom client websites on Joomla and WordPress with bespoke extensions, maintained the public and co-located servers behind them, and automated the video department's delivery workflow for franchises across Canada.

System Administrator and IT Manager

Mar 2008 – Jan 2010

MKG Imaging Solutions Inc.

EDUCATION AND DEVELOPMENT

Seneca College, School of Communication Arts

Honours Diploma, Computer Graphics Technical (CGT)

Toastmasters International

Advanced Communicator Bronze (ACB) · Competent Leader (CL)