

# Jonathan Wu

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## Summary

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Senior software engineer and founder with a track record of building and shipping production systems across the full stack - from embedded firmware and distributed backend architecture to AI driven data pipelines. Known for taking end-to-end ownership of complex problems and delivering reliable, high quality software in fast moving environments.

## Experience

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### Yume Arcade

#### Founder & CTO

- November 2023 – Current
- Java – Spring, NextJS, Postgres, Network Architecture**
- Founded and led all technical development for a physical arcade business, scaling it to \$XXX/month in revenue as the sole engineer owning software, hardware, firmware, and network infrastructure end-to-end.
  - Designed and manufactured custom PCB hardware with ESP32 (Arduino/C++) firmware to power a proprietary arcade credit system, enabling deep hardware-software integration and full control over the payment and session lifecycle.
  - Built bespoke backend services to manage credits, user actions, and device state synchronization across machines, maintaining zero production downtime since launch.
  - Designed and deployed an on-premises server architecture enabling fully offline operation, eliminating dependency on internet connectivity and ensuring sub-100ms payment latency at all times.
  - Engineered, manufactured, and deployed self-service customer kiosks integrating NFC chips, multi-card dispensers, and Square payment APIs – cutting required clerk headcount by 50% and redirecting staff to higher-value customer interactions.
  - Built a digital queue management system and customer-facing app that optimized peak-hour throughput, driving an estimated 10% increase in revenue per hour.

### ShareSFR

#### Senior Software Developer

November 2024 – Current

**Python, Langchain – OpenAI, Postgres, AWS**

- Sole engineer responsible for designing and delivering an AI-driven document ingestion platform capable of processing 3,000 unstructured legal and financial documents per day into normalized, queryable database models.
- Optimized the full pipeline to operate within AWS micro-instance constraints, reducing per-document processing cost by 75% while preserving throughput and reliability at scale.
- Architected multi-step LLM pipelines using OpenAI models to automate document classification, entity extraction, and date parsing - transforming raw, unstructured input into serialized, versioned records with no manual intervention.
- Designed and implemented a confidence scoring and thresholding system to surface uncertain AI outputs for human review, improving downstream data quality and reducing silent errors in production.
- Eliminated manual document tagging bottlenecks, enabling the business to onboard new data sources faster and materially increasing the volume of documents processed per analyst per day.
- Owned all architecture decisions, data modeling, and operational tradeoffs for a production AI system end-to-end under significant infrastructure and model performance constraints.

### Loblaw Digital

#### Software Developer

November 2019 – November 2024

**Java – Spring, Elixir – Phoenix, GCP, PostgreSQL**

- One of 4 engineers trusted with ownership of 2 critical, revenue-impacting services within a 100-person engineering org at Canada's largest retailer.
- Designed and delivered a real-time stock visibility feature for the cart service, integrating live inventory feeds with data-science-predicted stock levels to reduce product substitutions and improve the end-to-end customer shopping experience.
- Overhauled logging and alerting infrastructure across core service components, cutting false positive alerts by 50% while increasing signal fidelity - giving the on-call team clearer, more actionable insight into real system errors.
- Introduced CI/CD performance testing baselines that established continuous visibility into service health, enabling the team to catch regressions before production and maintain P99 SLA compliance across all deployments.
- Reduced P95 API latency by 15% and improved performance for large cart operations by 25% through targeted profiling and refactoring of critical service functions.
- Designed and built new microservice components with a focus on performance, maintainability, and long-term code quality across a high-traffic production system.

## Education

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### Bachelor of Science, Honours Computer Science

Wilfrid Laurier University

Minor, Economics

## Languages & Tools

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Elixir / Java / C/C++ / Python / JavaScript / React / NextJS / LangChain / Django / Postgres / SQL / Redis / Docker / Kubernetes / Terraform / GCP / AWS / Kafka / Grafana / Git / Linux / Microservice Architecture / REST APIs / CI/CD

## Hobbies

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- Built a homelab featured on the front page of Reddit and covered in multiple tech publications.
- Hobbyist hardware hacker - enjoy modifying arcade cabinets, and am an active member of a local maker space.
- Designed and assembled a 3D printer from scratch; enjoy 3D modeling as a hobby.
- Mechanical keyboard enthusiast and coffee aficionado.
- Top 1% ranked in League of Legends and Valorant.