Jonathan Nicholas

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https://github.com/Chromadream

chromadream.github.io

Work Experience

- **ChatShop.org** Melbourne, AU
  Founder *Sep 2024 - present*

  - Founded and built Chatshop.org, a GenAI-powered shopping assistant combining multimodal search with real-time recommendations through interactive 3D conversational interface
  - Developed responsive frontend using React, Tailwind CSS, and shadcn/ui with dynamic 3D avatar interactions via AWS Sumerian Hosts
  - Architected backend services with LangChain, FastAPI, and Pydantic for robust data validation and API design
  - Implemented RAG vector search using pgvector for semantic product matching and context-aware conversation history
  - Integrated OpenAI APIs for natural language processing and tool-using agent behaviors with streaming responses
  - Enhanced user experience with AWS Polly speech synthesis, enabling natural multimodal interactions
  - Secured platform with AWS Cognito authentication and scalable session management
  - Established comprehensive observability using Langfuse for LLM performance monitoring and prompt optimization
  - Automated nightly product catalog ingestion through custom web scraping framework, maintaining current inventory data
  - Deployed secure infrastructure on AWS with Cloudflare integration for DDoS protection and TLS management
  - Leading ongoing product development including UX design, AI optimization, and strategic feature roadmap planning
  - Delivered end-to-end system encompassing frontend, backend, MLOps, and infrastructure for production-grade GenAI application

- **Dye & Durham Australia (previous GlobalX)** Melbourne, AU
  Senior Software Engineer *Dec 2021 - present*
  Software Engineer *Dec 2019 - Dec 2021*
  Junior Software Engineer *Jan 2019 - Dec 2019*

  - Developed Property Title data integration solution connecting all Australian jurisdictions, utilized by major banks nationwide
  - Contributed to maintaining large-scale workflow productivity tools serving Australian conveyancers
  - Collaborated on designing and developing new Practice Management Software from concept to deployment
  - Enhanced document storage systems and streamlined workflow processes
  - Optimized CI/CD pipelines to improve deployment efficiency across development teams
  - Mentored junior engineers through code reviews, pair programming, and technical guidance
  - Introduced contract testing practices that increased release confidence and reduced production issues

Education

- **Monash University**   Melbourne, AU
  B.InfoTech (Computer Network & Security)   *2017 - 2018*

    - GPA 3.3
    - Participated in UniHack Mini Monash, 2017
    - Developed two major software development project on PHP 7 as main developer

- **Monash University**   Melbourne, AU
  Diploma of Engineering (IT Stream)   *2016 - 2017*

    - GPA 3.75

Technical Skills

- **Programming Languages:** C#, Ruby, Java, PostgreSQL, Node.js, TypeScript, Silverlight, Deno, Python, JavaScript.

- **Frameworks and Libraries:** Angular 2+, ASP.NET Core, Entity Framework Core, Vue.js, React, LangChain, LangServe, FastAPI, Pydantic, TailwindCSS, shadcn/ui.

- **Development Tools:** git, Visual Studio Code, TeamCity, Octopus Deploy, Docker, Kubernetes, Kong, Google Cloud Platform, fluxcd, AWS ECS, AWS Cognito, AWS Polly, Langfuse, pgvector.

- **Development Practices:** Test Driven Development, Agile Development, Scrum, Continuous Integration/Continous Delivery (CI/CD), Automation and Scripting, DevOps, MLOps, RAG Implementation, GenAI Application Development.

- **Cloud and Infrastructure:** AWS (ECS, Cognito, Polly, Sumerian Hosts), Cloudflare, DDoS Protection, TLS Management, Infrastructure as Code, Web Scraping Automation.

- **AI/ML Technologies:** OpenAI APIs, Natural Language Understanding, Vector Search, Semantic Matching, Multimodal AI, Speech-to-Text/Text-to-Speech, Agent-based Systems, LLM Observability.

Awards and Scholarships

- **Monash University - Information Technology International Merit Scholarship (2017):** A scholarship awarded from Monash University for exceptional study progression and results.

- **Monash College - Academic Excellence Award (2016):** Awarded for "Introduction to Algorithms and Programming".