

# AMNISH SINGH ARORA

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Software Developer with a strong background in **AI engineering** and **Web Development**, having relevant experience at both large enterprises and fast-paced startups.

## Experience

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### Software Engineer – [DeepStructure](#)

Jul 2024 – Present

- Joined as the 6th employee at a Silicon Valley startup, developing a **TypeScript-based AI platform** that enables web developers to build and host agentic workflows powered by reactive data sources.
- Architected core components of our [OpenAI's Assistants API](#) re-implementation, including **streaming responses** (NATS), retries with **assertions**, **fallback models** with concurrently racing requests, robust **rate-limiting** using a TTL cache, and a comprehensive **smoke test suite** integrated into **CI**.
- Added support for using **non-OpenAI LLM providers** like Google, Anthropic, Sambanova, Groq, and Amazon Bedrock "through" OpenAI Assistants API.
- Reorganized the **structured completions** module in SDK to follow best practices inspired by open-source projects like [Vercel's AI SDK](#).
- Implemented **dynamic self-improving** agents that leverage **user feedback** to generate increasingly relevant and fine-tuned responses over time.
- Optimized the performance and accuracy of structured completions in a **customer-facing** project by exploring various **prompt engineering** techniques, ultimately identifying that non-nested output schemas reduce **LLM confusion** and improve generation speeds.
- Developed several **Slack bot** reference apps on top of DeepStructure platform for **customer demos**, and a mechanism to automatically refresh access tokens for deployed apps.
- Built an **LLM evaluation React dashboard** enabling side-by-side model comparisons using the "LLM as a Judge" approach; also implemented a concept of **versioned Assistant families**, allowing users to mark a favorite for consistent routing within each family.

### Frontend Developer – [Ontario Treasury Board Secretariat](#)

Sep 2022 – Jul 2024

- Contributed to the **Angular** frontend of OnTrack, a large enterprise application integrating multiple legacy systems used by the Cabinet Office and Treasury Board, within an **Agile** team.
- Played a key role in a **major feature redesign**, enabling users to submit and apply **Suggestions** for Key Activities and Milestones tied to the Cabinet Office's election commitments.
- Developed features to generate document reports presenting **aggregated data** across multiple critical applications.
- Refactored **10** web applications and reusable packages to comply with [WCAG 2.1](#) and [WCAG 2.2](#) guidelines, ensuring **accessibility** for users with disabilities and resolving more than **200** issues.
- Secured **4** consecutive **contract renewals** following initial co-op placement.
- Helped **onboarding new hires** including coop students and mid-level engineers.

## Education

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**Advanced Diploma:** Computer Programming and Analysis

Sep 2021-Apr 2024

**Seneca College of Applied Arts and Technology** – Toronto

- Named to the President's Honor List in all semesters.
- Graduated with a perfect GPA of 4.0 and high honors.
- Opted for electives in Cloud Computing, Open Source, and iOS development.

### ChatCraft ([URL](#)):

- [3<sup>rd</sup> largest contributor](#) to a developer-oriented **AI chatbot** with **168** GitHub stars, featuring a function tools editor, speech capabilities, image processing, and more.
- Integrated **Text-to-Speech** capabilities like real-time audio streaming, customizable voice selection, and downloading messages as audio.
- Improved audio **download speeds** by **500%** by intelligently splitting message content and re-assembling concurrently generated audio chunks, also enabling downloads of [infinitely long messages](#).
- Developed experimental features like [Web Handlers](#), enabling users to seamlessly integrate and invoke their **backend microservices** directly within ChatCraft.

### Eslint-plugin-error-cause ([URL](#)):

- An [ESLint](#) plugin enforcing proper usage of the [error cause](#) property when re-throwing exceptions, reporting, and automatically fixing lost error context in **JavaScript** and **Typescript** projects.
- Efficiently traverses the [JavaScript Abstract Syntax Tree](#) to detect violating nodes and leverages modern best practices with fully type aware rules using [typescript-eslint](#).
- Appreciated by the community at various platforms including [Dev](#) and [Reddit](#), achieving **1000+** [NPM downloads](#) within the first week.

### Dine-A-Night ([URL](#)):

- A highly customizable restaurant **reservation** app, allowing restaurant owners to **visually design** seating layouts using a **drag-and-drop** interface, customers to reserve seats from the map, and admins to **monitor** upcoming and historical reservations.
- Built using a distributed [architecture](#), with **Angular** Frontend, **Express.js** for business logic, **MongoDB** for structured data, **Firebase** for authentication and blob storage, and **Google Cloud** for Maps and Address Autocomplete features.
- Comes with a comprehensive [User Manual](#) and [YouTube Demos](#) for onboarding new users and attracting **investor interest**.

## Technical Skills

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- **AI Engineering:** Working knowledge of prompt engineering techniques like **RAG** and **Few-shot prompting**, and consuming/extending services offered by different AI providers.
- **Backend Development:** Capable of creating **secure** and reliable REST APIs and server-side rendered apps in Node frameworks like **Express.js** and **Hono**, and some experience in **ASP.NET**.
- **Frontend Development:** Capable of building highly interactive web apps leveraging modern Frontend frameworks like **Angular**, **React** and **Remix**. Deep understanding of semantic HTML and advanced CSS to build responsive and accessible designs.
- **Cloud Computing:** Deep understanding of Cloud Fundamentals, **Docker**, and experience in consuming a wide range of services provided by major cloud providers like **AWS**, **Azure**, and **Google Cloud**, including authentication, storage, compute, and LLM infrastructure.
- **Programming Languages:** Developed several [projects](#) in **C/C++**, **Python**, **Java**, **C#**, and **Swift**, written with clean, structured and maintainable code following best practices.
- **Databases:** Proficient in designing normalized relational database models and leveraging powerful features of multiple flavors of **SQL** like **Postgres**, **Oracle**, and **MySQL**. Familiar with tradeoffs between different types of **NoSQL** databases and experience using Document databases like **MongoDB**.