

# Pavithran Chelliahpillai

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## EXPERIENCE

### HTS Engineering

Jun. 2024 – Aug. 2024

*Software Engineering Solutions Subcontractor*

*Toronto, ON*

- Designed and implemented a database system to efficiently index and manage **500+ projects and code snippets**, enabling seamless future reuse and repurposing
- Developed a full-stack web application for project management using **Django, JavaScript, Node.js, PostgreSQL, and MySQL**, enhancing user experience and system integration
- Optimized retrieval operations by leveraging **polynomial rolling hashing** and designing a **latent semantic search indexing algorithm**, achieving a **300%+ improvement in query speed** and a **73% reduction in erroneous queries**

### Principle Air Systems

Jun. 2022 – Aug. 2024

*Automation Systems Programming Intern*

*Vaughan, ON*

- Assisted HVAC engineers with creating **technical drawings** and related **integrated graphics** of over **100+ buildings' systems**
- Gained technical knowledge of air systems, and the importance of the design process through assisting the **planning of 175,000ft<sup>2</sup>+** of buildings' layouts
- Applied programming expertise in automotive programming systems across **50+ large-scale projects**

### Narpavi Consultancy

Jan. 2024 – Present

*Founder, CEO, Freelance Web Development Firm*

*Mississauga, ON*

- Developed front-end and back-end web applications and sites for **10+ companies and organizations**, generating **\$10k+ annualized profit**
- Utilised **HTML, CSS, and JS within a Svelte framework** to create captivating websites with heavily optimised, high performance code
- Portfolio of work: [Kanthavanam](#), [Principle Air Systems](#), [Personal Site](#)

### Oakville Swim Academy

Feb. 2023 – Jul. 2024

*Swim Instructor*

*Oakville, ON*

- Worked with **100+ students** of all skill levels and abilities from **beginners to Olympic levels**
- Collaborated with deck supervisors, operational managers, and parents** to provide high quality lessons

## PROJECTS

### TrainTrack | C++, Armadillo, Dlib, QuantLib, React.js, PostgreSQL

Mar. 2024 – Present

- Developed a webapp to back-test user-created stock strategies through artificial intelligence
- Recognizes distinctions in price action between technical (chart-based) analysis and fundamental (event/news-based) analysis at a high degree
- Utilizes a C++ stack with Armadillo as the main artificial intelligence library for efficiency with a React frontend

### LEGOify | Python, C++, React, Django, MySQL

Jan. 2022 – Aug. 2023

- Created an app designed from scratch to allow users to take a picture of any item and instantly receive pictorial instructions on how to create a 3-D LEGO model of the object
- Applied a divide-and-conquer algorithm with dynamic programming techniques to optimize solutions for large scale models, along with photogrammetry artificial intelligence technology

## EDUCATION

### University of Waterloo

Waterloo, ON

*Bachelor of Software Engineering, Honours, Co-operative Program*

*Sep. 2024 – May. 2029 (Exp.)*

*Minor in Computing and Optimization, Specialization in Artificial Intelligence*

## AWARDS AND HONOURS

**Academic:** Recipient of the Governor General of Canada's Academic Medal of Excellence (99.83% average)

**Scholarships:** UWaterloo President's Scholarship of Distinction, UWaterloo Alumni@Microsoft (Offered), \$15,000 UofT President's Scholar of Excellence (Offered)

References available upon request