

# David Li

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## WORK EXPERIENCE

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**Full Stack Developer** | *React, ASP.NET Core, SignalR, Flask* Belleville, Ontario  
*BCS Automation* January, 2025 – April, 2025

- Built a **Flask**-based **REST API** integrated with **Celery** and **Redis** to automate **ML retraining** workflows and enable asynchronous execution, reducing pipeline latency by **84%**
- Optimized query performance in **Azure Data Explorer** by restructuring data storage and retrieval logic, reducing average sensor query time from **300ms to under 1ms**
- Engineered a **SignalR**-based real-time data delivery system optimized for low-latency updates, improving responsiveness for vessel operators and reducing web client message latency by **43%**
- Designed and developed a full-stack analytics platform end-to-end using **React** and **ASP.NET Core**, enabling real-time telemetry tracking and improving predictive maintenance for **10+ offshore patrol vessels**

**ML Research Intern** | *PyTorch, scikit-learn, Pandas, matplotlib* Toronto, Ontario  
*Sunnybrook Research Institute* May, 2024 – August, 2024

- Developed and fine-tuned **machine learning models** with **PyTorch** and **scikit-learn** to improve daily trauma prediction and support surgical scheduling decisions, increasing prediction accuracy by **25.4%**
- Used **Pandas**, **seaborn**, and **matplotlib** to analyze a dataset of **50,000+ surgical cases**, uncovering trends and bottlenecks that informed improvements in surgical scheduling

**Software Engineer** | *React, TypeScript, Next.js, Kubernetes* Kingston, Ontario  
*Riftium* June, 2022 – September, 2023

- Designed and implemented fullstack websites for businesses, using **TypeScript** and **React**, deployed to a custom **Kubernetes** cluster, **Shopify Headless API**, and **Next.js** hosted on **Vercel**
- Helped businesses strengthen **customer engagement**, leading to revenue growth of up to **4×** post-launch

## PROJECTS

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**Trajectify** | *Python, PyTorch, TypeScript, React, Next.js*

- Developed and fine-tuned **Llama-7B** on LinkedIn profile data from Canadian institutions to generate personalized career paths and actionable next steps
- Won **Second Place** @ JAMhacks7 out of 137 participants

**Moonlit** | *Python, PyTorch, TypeScript, React, Next.js*

- Utilized **GPT-NeoX-20B** and a fine-tuned **BigBird** on AllSides data to analyze and identify bias and emotional content in news articles
- Won **Third Place** @ Hack The Change out of 376 participants

**reBlock** | *Python, PyTorch, TypeScript, React, Next.js*

- Trained and fine-tuned **RoBERTa-base** on over **31,000 YouTube** videos to detect and skip sponsored segments in real time based on video transcripts, achieving **97.5%** token level accuracy
- Won **First Place** @ Hack3 out of 374 participants

## EDUCATION

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**University of Waterloo** Waterloo, Ontario  
*Bachelor of Software Engineering* September 2023 – Present

## SKILLS

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**Languages:** Python, TypeScript/JavaScript, C#, C/C++, HTML/CSS, SQL

**Technologies & Tools:** React, ASP.NET Core, Flask, Next.js, PyTorch, scikit-learn, FastAPI, MongoDB