

Avnoor Singh Ludhar

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TECHNICAL SKILLS

Languages: JavaScript, TypeScript, Python, Java, C, C#, HTML5, CSS3, SQL

Technical Skills: React.js, Node.js, ASP.NET, FastAPI, Redux Toolkit, PostgreSQL, Git, GitHub, Unix CLI, Matplotlib, Pandas, NumPy, Scikit-Learn, Next.js, MongoDB, REST APIs, Amazon EC2, XUnit, Cypress

EDUCATION

B.Sc. Honours Computer Science with Honours Software Engineering Specialization Co-op Sep 2023 - Present
University of Windsor • Windsor, Ontario | Expected graduation: Dec 2027

- Major GPA: **97.2%**
- Minor in Mathematics

WORK EXPERIENCE

Software Developer Co-op May 2025 – Present
Utilismart Corporation • Windsor, Ontario

- Contribute to **SmartMap's outage detection** platform by building a web-based electrical grid editor with **React.js** and backend services with **ASP.NET** and **C#**, enabling real-time outage reporting and **grid updates**
- Develop a real-time **service health dashboard** with automated email **alerting** to **flag data pipeline** issues such as missing smart meter data, reducing detection time by **90%**
- Write **SQL** queries to process **100,000s** of grid data records, powering **health dashboard metrics** and **alert logic**
- Ship a **high-performance C#** import service to load **100K+ nodes and lines** from external electrical grid models into the active model editor, **accelerating import** time by **70%**
- Create automated **Cypress** and **xUnit** functional tests to ensure reliability of outage-related features

Research Assistant Sep 2024 – Apr 2025
University of Windsor • Windsor, Ontario

- Analyzed social media sentiment and wastewater data to identify **correlations** and forecast public health trends
- Created **heat maps** to analyze relationships between COVID biomarkers in Windsor wastewater data and **public sentiment** on topics such as health, wellness, and financial stability, supporting **research** on pandemic trends

Teaching Assistant Sep 2024 – Apr 2025
University of Windsor • Windsor, Ontario

- Taught **algorithms/data structures** to **100+** students, improving student performance through hands-on labs

Software Engineer Intern May 2024 – Aug 2024
Glendor Inc. • Draper, Utah

- Led a team in assessing state-of-the-art **facial recognition models** to evaluate the effectiveness of **defacing algorithms** for **preserving anonymity** in CT scan facial data, boosting **privacy protection** in medical imaging
- Optimized model evaluation for healthcare applications by engineering a **parallel processing** solution in Python, reducing **confusion matrix construction** time by **90%** and improving **scalability**
- Boosted model testing efficiency by **50%** through **Python** preprocessing scripts for facial detection algorithms

Contract Full-Stack Software Developer Jan 2024 – Apr 2024
YourBeat Inc. / VotreRythme Inc. • Calgary, Alberta

- Implemented an interactive map search with **TypeScript**, **Next.js**, **Prisma ORM**, and **Mapbox API**, enabling music venues, artists, and vendors to connect by location, name and filter options

PROJECTS

Bitcoin Trader | Python, FastAPI, React.js, PostgreSQL, TypeScript, Amazon EC2, Unix CLI, pytest Sep 2024 - Dec 2024

- Launched a Bitcoin trader making daily buy, sell, or hold decisions by combining sentiment analysis (VADER) and technical indicators (RSI, SMA7 vs. SMA21), yielding **\$30,000** profit from **January 2022** to **February 2025**
- Processed a **multi-gigabyte** social media dataset of tweets by **chunking and parallelizing** Pandas pipelines, then seeded results into PostgreSQL and built **schedulers** to update indicators daily for **real-time** trading

InterviewME | TypeScript, React.js, Node.js, Redux Toolkit, PostgreSQL, Web Socket, JWT Feb 2024 - Dec 2024

- Built an AI-driven interview simulator that conducts **real-time** virtual interviews, providing instant scores and actionable feedback via a **fine-tuned LLM** on Google Vertex AI
- Engineered a **scalable** backend architecture with **WebSocket** integration and **Deepgram's SDK**, enabling real-time speech-to-text transcription and **low-latency** interaction between **AI** interviewer and users

HomeWorthAI | Python, FastAPI, React.js, PostgreSQL, TypeScript, Artificial Intelligence, RAG Jan 2025 - Feb 2025

- Created a **web application** to assist Californians in filing insurance claims by helping users recall lost items
- Leveraged **LLaMA 3.3**, **Detectron2**, and **Pinecone RAG** to personalize an **AI** chatbot from **uploaded** data