# Salah Salah

(437) 432-2939 | salahrec2@outlook.com | linkedin.com/in/salahsalah | https://github.com/salahs2

## EDUCATION

**McMaster University** — Hamilton, Ontario
*Honours Math and Computer Science* — *May 2025*

- **Academics:** Cumulative GPA 9 / 12 (3.3)
- **Relevant Courses:** Application of Machine Learning (B+), Data Privacy (B+), Advanced Probability & Games of Chance (A), Statistical Methods & Applications (A-), Software Development in Java (B+), Data Structures & Algorithms (A-)

## SKILLS

**Languages:** Python | Java | SQL | SAS | R | JavaScript | HTML | CSS
**Technologies:** Node.js | Vue.js | Express.js | React | Tailwind CSS | Git | PostgreSQL | SQLite | DB Browser | MongoDB | NoSQL | Linux | Docker | Firebase | Google Cloud | AWS | Jira | HTTP | TCP

## PROFESSIONAL EXPERIENCE

**McMaster University, St Joseph's Hospital** — Hamilton, Ontario
*Research Assistant – Statistics & Research Engineering Team* — *Jun 2023 – Dec 2023*

- Deployed a match-back algorithm for the WHO (World Health Organization) using ISCO2008 Job code classification, automating manual data cleaning and categorization, achieving a 70% accuracy in match rate of survey sampling data of over 500,000 rows of data
- Created a Levenshtein distance algorithm using Python & PostgreSQL to optimize data duplication, reducing unique entries by 50%, from over 16,000 to 8,000, significantly streamlining the dataset for analysis
- Optimized health data analysis by leveraging SQLite to query, filter, and aggregate large datasets, reducing extraction time to under 200ms and improving statistical reporting accuracy and efficiency

**McMaster University – Department of Physics & Astronomy** — Hamilton, Ontario
*Full Stack Software Engineer Co-op* — *May 2023 – Dec 2023*

- Designed and iterated on 5 prototypes using Figma wireframes, incorporating user feedback to improve usability and overall user experience
- Engineered full stack Test Database software using JavaScript and React, creating 8 different reusable front end components
- Utilized Git and GitHub workflows for version control, enabling collaboration and codebase management across multiple development stages
- Launched a desktop application using Electron.js to package and containerize application and enable installation across multiple platforms
- Developed and deployed user authentication and role-based access control with Firebase Auth and Google Cloud Platform services

**Jane Street** — New York City, New York
*Spring Week In Focus 2022* — *May 2022 – May 2022*

- Completed Jane Street's Trading Program, gaining hands-on experience with OCaml, electronic trading system fundamentals, and internal development tools by building a game engine backend and a trading bot for a simulated stock exchange

**Healthcare of Ontario Pension Plan (HOOPP)** — Toronto, Ontario
*Private Equity Intern* — *May 2022 – Aug 2022*

- Developed Python scripts using the Bloomberg API to automate fund analysis, reducing manual data processing time by 90%
- Validated three strategic buyers via comparable analysis, projecting potential sale multiples of 9x to 11x EBITDA, which accelerated the initiation of the sale process by conducting targeted due diligence on acquisition synergies

**Fidelity Investments** — Toronto, Ontario
*Quantitative Risk Engineer Intern* — *Jan 2022 – Apr 2022*

- Engineered a business intelligence system using Power Automate SaaS Platform, Python, and HTTPX to scrape news articles for risk-related keywords, reducing monitoring time and enhancing risk detection for global events
- Collaborated through code reviews and pair programming to ensure code quality, foster team development and share domain knowledge
- Contributed to Jenkins-based Continuous Integration & Continuous Development pipelines by integrating testing and deployment workflows
- Built a Python-based dashboard using Dash, NumPy, Matplotlib, Plotly, and Pandas, displaying statistical information on proprietary models, including indexing, normalization, optimization & significance results
- Assisted in developing a machine learning–based factor research dashboard using scikit-learn, focusing on the analysis of key investment factors such as growth, value, and volatility to support quantitative strategy development

## PROJECTS

**Catflix – Netflix Clone** | github.com/salahs2/Catflix

- Developed a full-stack Netflix clone using the MERN stack (MongoDB, Express.js, React, Node.js), implementing user authentication, dynamic content rendering, and responsive UI design

**Stanford CheXpert Data Set Model (CNN)** | github.com/salahs2/CheXpert-Model CNN

- Built and trained a Convolutional Neural Network (CNN) in PyTorch to classify lung opacity from CT scan images, achieving 80% accuracy and supporting early detection of respiratory conditions
- Preprocessed and augmented image data to improve model generalizability, including resizing, normalization, and transformations such as rotation and contrast adjustment
- Created visualizations of predictions and diagnostic confidence scores using Seaborn and matplotlib, enabling interpretation of model outputs