Liron Katsif

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Education

University of Waterloo Sep. 2025 - April 2030
Bachelor of Software Engineering - Honours/Co-op *GPA: 3.8/4.0*

Experience

Full Stack Engineer Aug. 2025 – Present
Savi Finance *Toronto, ON*

- Developed features used by 1000+ users for the app with React, integrating UI with backend services using Go.
- Architected and developed Social Circles system, including invitation workflows and relationship models.
- Implemented real-time purchase visibility, enabling 1000+ connected users to view each other's activity seamlessly.
- Built and optimized 30+ GraphQL APIs for secure, real-time financial and transactions data.
- Achieved 30% improvement in website SEO by reducing load times with asset optimization and caching.

Machine Learning Engineer Dec. 2025 – Present
Wat Street *Waterloo, ON*

- Developed a Volatility Contagion Explorer to model how market volatility propagates across 1000+ assets.
- Represented assets as nodes in a dynamic graph, capturing dependencies and 20000+ temporal relationships.
- Reduced forecasting error by 30% versus GARCH and LSTM models by capturing structural market correlations.
- Engineered the model to learn inverse relationships, identifying assets likely to appreciate during volatility shocks.
- Built robust data pipelines to construct and update evolving market graphs from time varying financial data.

Programming Tutor Aug. 2023 – Aug. 2025
Self Employed *Toronto, ON*

- Mentored 30+ students in algorithms, data structures, and OOP, boosting programming proficiency.
- Taught best practices across Python, C#, Java, and C, improving code quality and problem-solving skills.
- Delivered 500+ hours of personalized one-on-one tutoring, adapting teaching strategies to individual learning.
- Improved average student grade by 10% by identifying learning gaps and reinforcing core concepts.

Projects

Chess Engine (Chess-Hacks) | *Python, Pytorch, NumPy*

- Built a 1700 ELO chess engine using alpha-beta pruning with iterative deepening and transposition tables.
- Integrated a NNUE evaluation network in 24 hours to provide acccurate board scoring with minimal overhead.
- Achieved high performance by combining NNUE evaluation with optimized pruning, enabling a depth of 6-7.
- Designed engine architecture separating search, evaluation, and game-state to improve scalability and extension.

ML Digit Recognition | *Python, TensorFlow, NumPy*

- Built digit-recognition model using the MNIST dataset, achieving 98% accuracy with compact CNN architecture.
- Implemented data preprocessing, normalization, and batching to improve model stability and performance.
- Trained and evaluated the model using TensorFlow, tuning hyperparameters to minimize validation loss.
- Developed a prediction pipeline enabling classification of custom handwritten images outside the MNIST dataset.

MacOS Fixer | *Swift, macOS APIs*

- Built a macOS switcher that replaces Cmd+Tab with ability for cycling between windows of the same application.
- Engineered efficient app discovery and window-tracking logic using macOS Accessibility and Process APIs.
- Designed a minimal, responsive UI with smooth animations, mimicing windows Alt+Tab.
- Optimized performance to ensure real-time switching with negligible input latency and low CPU usage.

UW Flow Course Ranking | *Python, Selenium, Web Scraping, OCR*

- Developed a Python tool to rank courses by increasing difficulty using data from UWFlow.com.
- Enabled input via text lists or course list images through OCR integration, improving accessibility.
- Utilized Selenium for web scraping to retrieve course difficulty ratings and instructor feedback automatically.

Technical Skills

Languages: Python, C++, Go, Java, C#, HTML/CSS, C, Swift, JS, TS
Frameworks: Pytorch, React, TensorFlow, MongoDB, RestAPI, GraphQL, MySQL, OCR
Developer Tools: Git, PyCharm, VS Code, Jira, Postman, Visual Studio, GitHub, Xcode