

# Lior Rozin

✉ [contact@liorrozin.co](mailto:contact@liorrozin.co) | 🔗 <https://www.liorrozin.co/>

## Summary

---

Innovative developer with 4 years of professional experience in full-stack, cross-functional integration, and autonomous robotics. Proven at boosting system performance—streamlining tests and deploying ML. Passionate problem-solver driving tech innovation.

## Experience

---

### Shoebox Ltd.

Core Services Developer

05/2024 - Present

Ottawa, ON

🔗 <https://www.shoebox.md/>

- **Test Case & Unit Test Implementation:** Designed and implemented test cases and unit tests under ANSI s3.6-2018.
- **Cloud & Code Debugging:** Reduced rate of production calibration failures by debugging S3 bucket issues and refining the internal Unified Calibration System API integrations (C++, Python, .NET).
- **Sound Engine Optimization:** Diagnosed and resolved sound engine issues arising from iOS updates; collaborated with senior developers to identify and implement solutions for sound engine-related problems.
- **Automated Testing Dashboard:** Accomplished a 75% boost in testing efficiency, as measured by reduced cycle times, by pitching and developing a prototype dashboard using TypeScript, Node.js, Puppeteer, and React to automate multiple testing procedures.

### Body M3chanix

Full Stack Software Developer

02/2024 - Present

Ottawa, ON

🔗 <https://atalantapro.com/>

- **Firmware & Embedded Systems Development:** Developed C firmware for a Nordic nRF52840-based NORA B1 (Zephyr RTOS, ubxlib) and PIC18F on a custom PCB. Partitioned tasks—PIC18F collected sensor data; NORA B1 managed BLE (GATT) and edge processing—and implemented robust UART communication.
- **Software Development & Integration :** Spearheaded the end-to-end development of a modern web dashboard built with TypeScript, React, and Tailwind, featuring a Python Flask backend that communicates with Azure for data analysis and MongoDB using Axios.
- **Full-Stack Application Development:** Engineered cross-platform desktop applications (Windows, macOS, Linux) using Electron and React with MobX for state management ensuring SOC2 compliance while leading a team of 2. Developed a mobile app for iOS and Android in React Native (TypeScript) with Zustand—all featuring secure, encrypted BLE communication with devices.
- **Machine Learning Integration:** Trained a Temporal Fusion Transformer (TFT) - model that leverages attention mechanisms to capture long-term dependencies in time-series data (e.g., heart rate, blood oxygen levels), thereby enhancing predictive analytics capabilities.

### University of Bonn

GUI Developer

05/2022 - 07/2022

Remote

🔗 <https://ieeexplore.ieee.org/abstract/document/9956025>

- **PyQt GUI & Feature Integration:** Led development of a cross-platform PyQt GUI for University of Bonn researchers, optimizing and refactoring legacy code to integrate new functionalities while collaborating closely with the team.
- **Stability & Robustness Engineering:** Conducted comprehensive testing, debugging, and problem-solving to enhance software reliability, swiftly identifying and resolving complex issues.
- **Research Collaboration & Documentation:** Partnered on an IEEE Robotics & Automation paper by meticulously documenting software design and functionality, maintaining clear, ongoing communication with researchers.

## Education

---

### Carleton University

Bachelor's of Computer Science and Mathematics

09/2023 - 04/2027

Concentration in Statistics and Computing , Honours

Core Member of the Carleton Planetary Robotics Team:

- Spearheaded the integration of YOLOv7 for advanced navigation capabilities, significantly enhancing robot autonomy.
- Proficient in C++ within an Ubuntu framework, focusing on interfacing a Zed 2 camera and processing data on a Jetson Orin.
- **Robot Operating System (ROS2) Expertise:** Played a pivotal role in developing motor drivers, crucial for the robot's operational efficiency.

## Experience (Cont.)

---

### Freelance Developer

<https://github.com/Zayatsoff>

- Developed a machine learning software in collaboration with a photographer at Invest Ottawa, reducing client photograph review time by over 60%.
- Utilized MTCNN (Multi-Task Cascaded Convolutional Neural Network) to optimize image processing in the software.
- Implemented a PyTorch version of A Neural Algorithm of Artistic Style by Gatys et al. for a style transfer project, utilizing all 16 layers of VGG19 and implementing shift activation from Improving the Neural Algorithm of Artistic Style by Novak and Nikulin to improve the model.
- Contributed to a team of five on a blockchain-based app for HealthHacks, which tracks the entire journey of a cancer patient from diagnosis to post-treatment, and won Popular Choice Hack and Best Use of DeSo at PennApps x Wharton.

### Projects

---

#### UNEP x TKS

03/2023 - 08/2023

Researcher, Developer

<https://drive.google.com/file/d/1UdXquR7uvedY0u2KFJG3A00-C2JrvmVi/view?usp=sharing>

- Led a team of 4 to develop a Global YouTube Campaign that would fund the distribution of clean cooking solutions in rural Indian households.
- Utilized Python and BeautifulSoup for data mining purposes involving YouTube, TikTok, and Instagram, providing insights for targeting and campaign design.
- Conducted research, including interviews with over ten experts in the field, to gain insights into the challenges and opportunities associated with clean cooking solutions in rural India.
- Collaborated with team members to design a compelling presentation that incorporated insights and data from research and analysis.
- Presented campaign pitch to Project Managers at the UNEP, highlighting the potential impact of a Global YouTube Campaign on funding the distribution of clean cooking solutions. The campaign is currently under consideration for implementation as part of a future UNEP campaign, demonstrating the potential impact of our research, analysis, and insights.

#### The Knowledge Society (TKS)

09/2021 - 06/2022

Innovator

<https://www.tks.world>

- Spearheaded machine learning for Project Nural, a BCI headband aimed at treating resistant depression, in a team of four; pitched to investors.
- Researched and designed Oxalis's one-pager, an aptamer-based blood substitute, and presented to investors.
- Co-developed NeuroVoice, an AI-speaking device interpreting thoughts via BCI, with a team of five; built an early prototype and researched ML models.
- Created NeuroVoice prototype in a 24-hour hackathon, showcasing rapid development skills.
- Excelled in teamwork, closely collaborating to meet project goals while ensuring personal accountability.

### Skills

---

#### C++

Proficient in C++ with diverse applications in Arduino projects, Unreal Engine development, and crafting server/client socket communications.

#### Machine Learning

Extensive experience with Python; including PyTorch and Tensorflow.

#### Web Dev

Proficient in leveraging ReactJS and TypeScript for dynamic, responsive web application development, and state management. Experienced with backend MongoDB, AWS, and Azure integration.

#### Java

Expertise in designing and implementing user interfaces using Java, showcasing a strong foundation in user-centric application development.

### Languages

---

#### English

Fluent

#### French

Fluent

#### Russian

Native

#### Hebrew

Native