

# Isabella Rossi

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## EDUCATION

### University of Waterloo

Waterloo, ON

*Biomedical Engineering, Bachelor of Applied Science (BASc)*

*Sept 2022 - April 2027*

- Relevant courses: Data Structures & Algorithms, Digital Computation, Linear Systems & Signals, Linear Algebra, Introduction to Biomedical Design, Human Factors in the Design of Biomedical and Health Systems

## SKILLS

**Languages:** Python, Java, C/C++, Javascript, SQL, Golang, HTML/CSS, Kotlin, Ruby, Scala

**Libraries:** TensorFlow, PyTorch, Keras, Redux, NumPy, OpenCV, pandas

**Frameworks/Tools:** React, AngularJS, NodeJS, Spark, MongoDB, MySQL, Hadoop, .NET, SproutCore, Kubernetes

## EXPERIENCE

### Software Engineer Intern

Sept 2024 – Present

*Zynga Inc.*

*Toronto, ON*

- Developed a scalable **machine learning analysis pipeline** using **Python** and **TensorFlow** to process **4 million data points** for real-time anomaly detection, enhancing system accuracy by **60%**
- Built an **AI assistant recommendation engine** leveraging **Generative AI** for personalized content delivery, achieving **95%** accuracy and providing tailored insights to over **3 million users**
- Developed an event-driven **microservice** architecture with **Java** and **AWS Lambda** for real-time event processing in high-traffic applications, improving scalability by **75%**

### Research Student

Aug 2024 – Present

*University Health Network (UHN)*

*Toronto, ON*

- Conducted a **pilot study** to evaluate the accuracy and reliability of **cardiovascular metrics** collected by consumer-grade wearables in **heart failure and ventricular assist device (VAD) patients**
- Integrated a **machine learning algorithm** that leverages **real-time data** to estimate **cardiac output** based on physiological parameters for **VAD patient monitoring**
- Analyzed and validated data from **wearable devices** against **clinical-grade equipment**, including ECGs and pulse oximeters, to assess the **feasibility** of remote cardiovascular monitoring

### Software Engineer Intern

Jan 2024 – April 2024

*TD Bank*

*Toronto, ON*

- Developed an analytical **portfolio management platform** and **APIs** in **Python** and **SQL**, and integrated **trading algorithms** to improve process flow by **>85%**
- Built impactful interfaces using **Java**, **AWS S3**, and **PostgreSQL** to provide analytics for mobile banking userbases, achieving a **40%** rise in transaction volumes
- Implemented robust **analytics pipelines** using **Java**, **Kafka**, and **Flink** **sterilization** to deliver **500+ trading** data updates to clients per day with automated security testing

## PROJECTS

### 🔗 Spinal Cord Injury Detection | *Python, Computer Vision, TransUNet, TensorFlow, PyTorch*

- Developed a **machine learning tool** using **computer vision** and **TransUNet** for automated **injury localization** and soft tissue **segmentation** in spinal ultrasound images, enhancing clinical assessments

### 🔗 Alzheimer's Disease Diagnostic Optimization | *Bidirectional LSTM, Python, NumPy, pandas, PyTorch*

- Built machine learning models, including a **cost-effective predictor selection algorithm** and a **bidirectional LSTM** to improve **diagnostic accuracy** and **early detection** of Alzheimer's Disease progression

### 🔗 Human Activity Recognition Movement Classifier | *Python, MATLAB, TensorFlow, NumPy*

- Built an **LSTM-based model** achieving **94% accuracy** in **classifying six physical activities** using smartphone **sensor data**, demonstrating strong temporal pattern recognition