

# Ilia Romanov

Software Developer | Machine Learning

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## Skills

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**Languages:** Python, JavaScript, SQL, HTML/CSS, Go, C/C++, R

**Libraries/Frameworks:** Flask, Django, FastAPI, jQuery, Tensorflow, Keras, OpenCV, Pandas, Numpy, NLTK

**Tools/Databases:** Git, Docker, Postman, PostgreSQL, Microsoft SQL Server, Oracle, Apache Hive, MongoDB

## Education

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**University of Waterloo**

Sep 2020 - Apr 2025

**Bachelor of Computer Science (BCS)** | cGPA: **94.1%**

## Experience

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**Software Developer** | *Opta Information Intelligence*

May 2021 - Aug 2021

- Built a **Convolutional Neural Network** model using Keras to classify report pages with **>90% prediction accuracy**, greatly reducing the number of pages that need to be manually reviewed during report creation.
- Designed a **full-stack web app** around the Keras CNN model using JavaScript/jQuery with HTML/CSS for a dynamic frontend, Python, Flask, Tensorflow, and Pandas for the backend which preprocesses image data and applies the Keras CNN model, and Microsoft SQL Server for the database.
- Wrote Python script using the SpaCy NLP library and threading to parse **>1.5 billion rows** of unusable raw text data from a SQL Server database into usable categorical data with **94% parsing accuracy**.
- Worked as member of **Agile Scrum team** to build several **API microservices** using languages, databases, and tools such as Python, Pandas, Flask, JavaScript, jQuery, MongoDB, Apache Hive, Docker, and Postman.

## Projects

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**IliaBot - Resume Chatbot** | *Personal Project*    

*Python, Flask, FastAPI, JavaScript, jQuery, NLTK, Tensorflow, Pandas, Numpy, HTML/CSS, Git*

- Developed a model and web app for an AI chatbot to provide insights about myself and my resume.
- Created a Keras **neural network** classifier model to predict intents behind bag-of-words inputs.
- Built **REST API microservice** using Python FastAPI for applying NLTK based **NLP pipelines** to raw text data.
- Created a **full-stack web app** implementing a JavaScript/jQuery frontend and Python/Flask backend.

**Stock Trade** | *Personal Project*  

*Python, PostgreSQL, Flask, HTML/CSS, Bootstrap, IEX Cloud API, Git*

- Deployed full stack web app that allows users to track real-time stock data, providing them with personal accounts including stock portfolios and transaction histories using data from the IEX stock exchange API.
- Built a fully functional **user authentication system** using Flask sessions and a PostgreSQL database.

**AI Based Desktop Controller** | *Personal Project* 

*Python, OpenCV, Mediapipe, Numpy, Google Speech-to-text Web API, Git*

- Created a computer vision based alternative to a physical mouse and keyboard allowing hand gesture based control of mouse, hand gesture based master volume slider, and speech to text typing functionality.
- Utilized OpenCV, Mediapipe, and NumPy to generate and process real-time position vector data of user's hands and execute Python scripts to perform gesture triggered actions.
- Implemented a **multi-process architecture** to allow users to seamlessly perform several actions in parallel.