Ilia Romanov
Computer Science, Honours, Co-op

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Skills

Languages: Python, JavaScript, SQL, HTML/CSS, Go, C, C++, R
Libraries/Frameworks: Flask, FastAPI, jQuery, Tensorflow, Keras, Pandas, Numpy, Scikit-learn, OpenCV, NLTK
Tools/Databases: Git, Docker, Postman, MongoDB, PostgreSQL, Microsoft SQL Server, Oracle, Hive

Experience

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.
- Made a **full-stack web app** using Python, Flask, Tensorflow, and Pandas for the backend which preprocesses image data and applies the Keras CNN model, JavaScript for the frontend, and 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 structured data with **94% parsing accuracy**.
- Worked as a member of an agile scrum team to build and document several **APIs and microservices** utilizing Python, Flask, Pandas, JavaScript, jQuery, MongoDB, AWS, Docker, Jira, and Confluence.

Projects

IliaBot - Resume Chatbot ⦿ ⦿ ⦿ ⊕

Python, Flask, FastAPI, JavaScript, jQuery, MongoDB, Tensorflow, Keras, NLTK, Pandas, Numpy, Scikit-learn, HTML/CSS, Git

- Developed a model and web interface for an AI chatbot to provide insights about myself and my resume.
- Built a **REST API microservice** with Python FastAPI for applying NLTK based **NLP pipelines** to raw text data.
- Designed a Tensorflow Keras **neural network** classifier model to predict intents behind bag-of-words inputs.
- Created a **full-stack web app** implementing a dynamic JavaScript/jQuery frontend and Python/Flask backend.
- Integrated an intuitive **user feedback system** using MongoDB to continuously grow the model's accuracy.

Stock Trade ⦿ ⊕

Python, Flask, PostgreSQL, HTML, CSS, Bootstrap, IEX Cloud API, Heroku, 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.
- Utilized a Python, Flask, and SQL backend to quickly deliver stock and personal profile information to users.
- Built a fully functional **user authentication** system using Flask Session and a PostgreSQL database.

AI Based Desktop Controller ⦿

Python, PyQt5, 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-threading architecture** to allow users to seamlessly perform several actions in parallel.

Education

University of Waterloo | Bachelor of Computer Science (BCS)   Sep 2020 - Apr 2025

- Term Distinction: Fall 2020, Winter 2021 (Cumulative Average: 94.1%)
- Presidents Scholarship of Distinction recipient

Notable Courses:

- Object-Oriented Software Development (C++, Bash, UNIX/Linux)
- Elementary Algorithm Design and Data Abstraction (C)
- Designing Functional Programs (Racket)
- Probability (R)