Marko Arezina

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TOOLKIT

Languages
Python
Javascript (ES6)
C++

Data Science
Tensorflow / Keras
XGBoost
Graph Databases
SQL
Scikit-Learn
Pandas
Jupyter Notebook

Web
React.js
Node.js
MongoDB
Gatsby

Tools & Platforms
Google Cloud
Git

AWARDS

▷ 2019 Samsung Bixby Premier developer
▷ Neo4j Certified Professional

EDUCATION

University of Waterloo
Bachelor of Computer Science, Co-op
2019 - 2024

PROJECTS

Unsupervised Graph-Based News Visualization

▷ Developed a network visualization of the news providing insight into what is being reported and how it is interconnected.

▷ Trained Doc2Vec machine learning models on a corpus of ~**250,000 scraped articles**.

▷ Built a natural language processing pipeline, including NLTK preprocessing, document embeddings, and **knowledge enrichment** with IBM Watson.

▷ Engineered a scalable Python API for processing articles using the Serverless Framework.

▷ Wrote graph DB queries (Cypher) to analyze article relations, generate a weighted graph, and perform **community detection**.

▷ Designed and developed a material UI React.js **web app**, incorporating a physics-based graph simulation, to visualize article relations and topic clusters.

▷ The project was **featured by Neo4j**.

Freshbots.org Lyrics Generator

▷ Launched a React.js web app to generate lyrics in the style of over **40 artists**, getting about **20,000 unique visitors** a month.

▷ Trained an LSTM to predict the rhyming pattern of lyrics generated by a Markov Model.

CSA Bio-monitor Physical Activity Prediction

▷ Trained an XGBoost model to predict the astronaut's physical activity based on their biometric data, automating the manual task of logging.

▷ Selected as a **national finalist** in the Canadian Space Agency Challenge.

Neuroscience Journals Exploratory Data Analysis

▷ Conducted an exploratory data analysis of **16,000** Frontiers in Neuroscience journals using Pandas, Matplotlib, and Scikit learn.

EXPERIENCE

Software Developer @ Waterloop - Hyperloop Student Design Team

Sept 2019 - Present // Waterloo, ON

▷ Developed backend routes with Express.js and MongoDB for team-management app used by **100+ members** of Waterloop.

▷ Initiated development of a Jest test suite and CI pipeline improving developer efficiency in a growing 10 person team.

Software Developer Intern @ Mindbliss

June 2019 - Sept 2019 // Ottawa, ON

▷ Developed integrations using Node.js and AWS Lambda to allow users to play subscription content from popular voice assistants: Alexa and Google Assistant.

▷ Built a Bixby Capsule that was **featured on the marketplace** and added by **2,000 users**.

Freelance Developer @ Vecgraph

Nov 2018 - Sept 2019

▷ **Consulted with startups** at Invest Ottawa regarding voice assistant strategy.

▷ Developed a **content recommendation API** using Python and Neo4j serving suggestions for relevant content based on similar concepts and topics.

▷ Designed and developed a programmatic flash briefing for a news site.