

# Konstantinos Kastritis

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## PROJECTS

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### Predicting Stock Prices - [kkastr/stock-price-predictions/](https://github.com/kkastr/stock-price-predictions/)

- Extracted 5 years of ticker data from Yahoo Finance using Python.
- Developed a model for the time series of stock prices using LSTM neural networks with PyTorch.
- Optimized model performance by 20% through hyperparameter tuning using Python, achieving an RMSE of 0.82 on the test dataset.
- Generated 4 visualizations that showcased the quality of the model's predictions using matplotlib and seaborn.

### Reddit Sentiment Analysis - [kkastr/reddit-sentiment/](https://github.com/kkastr/reddit-sentiment/)

- Collected post submissions from 5 subreddits using Python's PRAW library and stored the comments in a PostgreSQL database using Pandas.
- Designed a classification model using scikit-learn and conducted sentiment analysis on over 25,000 comments, achieving an overall accuracy of 86%.
- Created Tableau dashboard with 6 key metrics including sentiment analysis by subreddit, and comment volume over time, providing valuable insights into the behavior of reddit users and enabling data-driven decision making.

## EXPERIENCE

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### Ontario Tech University - Research Associate (Part-Time)

September 2021 - June 2022, Remote

- Devised pipeline for processing simulation data using Python and optimized storage efficiency by 20%.
- Designed key metrics that offered data insight and reduced overhead in data collection by 30%.
- Prepared visualizations of 8 data metrics using matplotlib and 3 CG illustrations for use in physics conferences.
- Maintained software used for research by 3 graduate students and provided technical support as needed.

### Ontario Tech University - Teaching Assistant

January 2015 - December 2020, Oshawa, ON

- Led labs and tutorials for physics and computer science courses, providing guidance on topics such as quantum mechanics, electromagnetism, and Python programming.
- Instructed 50 students in Linux and Python, covering topics such as file system management, shell scripting, and data manipulation and visualization.
- Provided individualized guidance and troubleshooting for 12 students on course projects involving programming tasks in C and Python.

### Ontario Tech University - Graduate Research Assistant

September 2016 - August 2019, Oshawa, ON

- Provided theoretical and data-driven insight to experimental work, contributing to the interpretation of experiments and co-authored 2 publications in peer-reviewed journals.
- Developed research-specific features and API using C++ and CUDA to GPU-capable simulation software that increased simulation performance by up to 50%.
- Enabled the group to transition from serial processing on clusters to GPU computing, which improved productivity by 20%.
- Authored internal documentation and trained 6 students in using custom simulation software.

## SKILLS

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- Python, C, C++, CUDA, SQL, Rust, Typescript
- Pytorch, Deep Learning, Time Series Models, NLP, Classification, React, Tableau
- Git, Linux, Docker

## EDUCATION

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### **Ontario Tech University**

Bachelor of Science, Physics, 2016

Awarded NSERC undergraduate research award.

Honors Thesis: N-Body Simulations of Dark Matter Halos

### **Ontario Tech University**

Master of Science, Materials Science, August 2019

Thesis: Computational Studies of Semiflexible Polymer Dynamics Under Confinement.