ERIC ZACHARIA

DATA SCIENTIST

CONTACT

(774) 239-5342
ekzachar@uchicago.edu
Resume Website
GitHub
LinkedIn

EDUCATION

M.S. Computer Science
Specialized in Data Analytics
University of Chicago ‘21

B.S. Aerospace Engineering
Syracuse University ‘16

SKILLS

Python, NumPy, Pandas, NLTK PyTorch, Keras, Scikit-learn Hugging Face, XGBoost, Flask PyMC3, TweePy, Matplotlib

Jupyter, Google Colab
Amazon EMR & SageMaker

SQL, Spark, Golang
QuantConnect, Alpaca API
Git, HTML, CSS, L^AT_EX, Excel

LICENSES

Secret Security Clearance ‘20
Private Pilot License ‘19
Scuba Diving License ‘16

WORK EXPERIENCE

NLP Data Science Intern, University of Chicago Medical Center — Summer 2021

Preface: A significant amount of medical knowledge exists in unstructured data such as medical notes, and many doctors waste valuable time carefully picking the proper ICD codes for their patients. Correct ICD codes are necessary for patients to receive proper follow-up procedures and are required by insurance companies for proper payment to the hospital.

- Developed language models to correct missing or wrong ICD codes with 96% accuracy
- Predicted diseases in cardiology patients using historical medical notes with 64% accuracy

Machine Learning Research Intern, Argonne National Laboratory — Summer 2021

- Worked with molecular engineers in researching machine learning techniques to compensate for the issue of drifting readings for water contamination sensors
- Applied Bayesian inference to predict the curve of voltage drift on experimental data
- Reduced run-time of the team’s compensation software from 45 hours to 27 minutes
- Educated the team about the applications of ML in molecular research
- Created non-CS-friendly pipelines for the researchers to use in their projects

Level II Aerospace Engineer, Spirit AeroSystems Inc. — 2016-2020

- Designed, built, analyzed, and tested Boeing’s 787 Dreamliner, and Boeing’s 777X, and an aerospace structure for The Department of Defense

Host of Glacier’s Bed and Breakfast — 2018-2020

- Hosted guests in my 3-bedroom home with over 80 bookings and a 5-star rating

Fluid Dynamics Researcher, Syracuse University — 2015-2016

- Studied the propulsive aspects of dolphin tails and experimented with 3D-printed dolphin caudal fins that mimicked swimming motion inside a water tunnel
- Synthesized knowledge of 3D printing, Arduino, laser-induced fluorescence, HD videography, fluid dynamics, and circuits
- Constructed 3D visualizations of vortex flows to demonstrate swimming efficiencies

PROJECT EXPERIENCE

Predicting the Genre of Music Samples using a Convolutional Neural Network — Fall 2021

- Extracted audio features from .mp3 files with labeled genres for training ML classifiers
- Realized optimal results from Support Vector Machines with 63% test accuracy
- Developed a Convolutional Neural Network to learn the patterns from spectrograms
- Classified music genres from spectrogram images with 83% test accuracy

Quantitative Momentum Trading Algorithm — Fall 2021

- Applied knowledge of fundamental valuation metrics and momentum-based trading ideas to create a paper trading algorithm that beat the S&P 500 by 10% over a 3-month period.

Predicting the Stock Market with Sentiment Analysis of Live Tweets — Summer 2021

- Developed an NLP pipeline that trades stocks using opinions about stocks on Twitter
- Trained a BERT classification model with tweets labeled “bearish” or “bullish”
- Communicated with Twitter API for live tweet sentiment classification
- Algorithmically traded stocks based on sentiment, classification certainty, price, etc.
- Tripled the S&P 500 after one month of bullish market trading

Other CS Projects

AdaBoost Decision Tree	Soft Margin SVM Primal/Dual	Decision Tree Classifier	Linear Regression Model
Ordinal Logistic Regression	k-Nearest Neighbors Classifier	Blob Video Game	Speaker Recognition
Text Completion Software	Wedding Website & Database	Diet Planner iOS App	Slack Clone

Last updated : 12/07/2021