Ziyue Yang

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LINKS

Website: **zyang.dev**
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COURSEWORK

(details)

GRADUATE

Statistical Methods for Machine Learning
ConvNets for Visual Recognition
Deep Learning and Neural Networks
Applied Regression Analysis
Advanced Methods of Data Analysis

UNDERGRADUATE

Theory of Statistical Practice
Statistical Inference
Probability and Statistics
Real Analysis
Non-linear Optimization
Multivariable Calculus
Linear Algebra
Enriched Data Structures and Analysis
Enriched Theory of Computation
Systems Programming & C
Assembly & Computer Organization
Software Design (Java & Android)
Introduction to Data Science

SKILLS

PROGRAMMING

Python · R · SQL · C++
Java · Swift · JavaScript

DATA SCIENCE & ML

TensorFlow · Pandas · Numpy · Keras
Sci-kit Learn · Matplotlib · Tidymodels

WEB TECHNOLOGIES

Flask · Django · React · REST · Jest

OTHER

AWS · UNIX · Kubernetes · Git
Git · Android · iOS · Scrum · Jekyll

EXPERIENCE

BIGTHETA | May - Sep 2020, (Remote) Toronto, ON, Canada

Project Leader; Software Developer

- Introduced software development tools
- Taught design principles (e.g. Object-Oriented design)
- Demonstrated full-stack development process: including front-end, back-end development, and SQLite data querying.

KWG GROUP HOLDINGS | Aug 2018, Guangzhou, GD, China

iOS Developer

- Contributed to the Swift development of iOS app *Cohesion*, a reservation tool for shared workspaces/offices.
- Implemented React-Native-based front-end features for mobile.
- Tested app features using the Jest framework.

TECHNICAL PROJECTS (MORE)

OPTIMAL PATHFINDER USING REINFORCEMENT LEARNING

Software that discovers the optimal (shortest) path to a goal in a simulated maze environment. I implemented a Q learning algorithm that selects moves for the reinforcement learning agent. Exploration strategies include epsilon-greedy and the Boltzmann Stochastic Policy derived from the softmax of Q-values.

CONVNETS FOR SENTENCE CLASSIFICATION

Convolutional Neural Network (ConvNet) trained on top of pre-trained word vectors for sentence-level classification tasks. The ConvNet models improve upon the state of the art on 4 out of 7 tasks, including sentiment analysis and question classification. This is a reproduced code based on Yoon Kim's sentence CNN.

NEURAL NETWORK FOR FACIAL EXPRESSION CLASSIFICATION

Fully-connected neural networks trained on a subset of *Toronto Faces Dataset*. We implemented the neural network from scratch and trained it by tuning a set of hyperparameters, and we modified the model architecture for better generalization. The model achieved an excellent testing accuracy of 71.69%.

FORECASTING TSLA STOCK USING ARIMA MODEL

We predicted Tesla's stock index using the Autoregressive Integrated Moving Average (ARIMA) model to convert non-stationary stock data to stationary, which allows us to apply time series analysis and make accurate predictions. ARIMA is one of the most popular models to predict linear time series data.

SEQUENTIAL CONVNETS FOR DIGIT RECOGNITION

5-layer Sequential Convolutional Neural Network for digits recognition trained on MNIST dataset. The ConvNet is bulit with Keras API with tensorflow-gpu backend. We achieved 99.446% accuracy with this ConvNet and got top 13% on the Digit Recognizer Competition.

EDUCATION

UNIVERSITY OF TORONTO | Sep 2018 - Jun 2022 (Expected)

Honours Bachelor of Science, Computer Science, Statistics, Mathematics

- **2018 Scholarship Recipient**, *University of Toronto President's Scholarship Program*
- **LearnAI Associate**, *UofT Artificial Intelligence Group*
- **Recognized Group Leader**, *Enriched Data Structures and Analysis*
- **Orientation Leader**, *Computer Science Student Union*