Ziheng Liang

University of Toronto
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Education

University of Toronto Sep 2013 – Jun 2018

- B.Sc., Computer Science (In progress)
- Specialized in Computer Graphics and Computer Vision
- GPA: 3.73

St. Andrew's College 2010 – 2013

- High School Diploma

Research Experience

Research Project Course: **Non-photorealistic style animation optical flow dataset** 2017
Supervisor: Masha Shugrina

- Created optical flow data and corresponding animation of various material style, outline brush style and camera position using blender
- Experimented existing machine learning based optical flow algorithm Flownet2 on above dataset

Work Experience

Sysomos, Toronto, Canada May 2016 – Apr 2017
Data Scientist Intern

- Developed models predicting hundreds of millions of Twitter users' demographics (age, gender, geo, political opinion) based on their follower-friend relationship using distributed system Spark and Hadoop, successfully predicted presidential election 2016
- Trained multi-sentiment models for different languages that predict human emotions of tweets using Java Weka, and created online classification tools
- Experimented traditional natural language processing methods and RNN that summarize articles from news and blog sites and multiple tweets of a given query
- Built model predicting stock market trend using Twitter Cashtag
- Involved in building a drag and drop framework for machine learning
- Performed data mining/cleaning on billions of data from Twitter, Tumblr, News and Blogs
- Created multiple backend API for web demo visualizations using various languages and frameworks

Academic Achievements

Dean's List
Regents In-Course Scholarship
Bloor Lands Admissions Scholarship

Relevant Courses and Projects

CSC2521 Computational Design and Fabrication (Graduate Course)

- Mesh and voxel representation, deformable objects simulation, numerical optimization
- **Project**: Real-time interactive tool for visualizing stress of deformable objects

CSC418 Computer Graphics

- 3D transformation, material and light models, ray tracing, animation, OpenGL
- **Project**: Built a 3d game using low-level graphical API OpenGL

CSC420 Image Understanding

- SIFT, multi-view geometry, feature and object recognition, video processing
- **Project**: Experiments on machine learning based optical flow

CSC411 Machine Learning

- Regression, clustering, SVM, PCA, reinforcement learning
- **Project**: Experiment multiple methods on facial gender recognition

CSC321 Neural Networks

- Convolutional Neural Network, Recurrent Neutral Network, LSTM
- **Project**: Facial recognition using TensorFlow

CSC404 Game Design

- **Project**: Developed a top-down 3d arena indie game with a team of developers, artists and musicians within 12 weeks from prototyping to alpha-beta to production.

CSC373 Advanced Algorithm

- Dynamic programming, network flow, P-NP problem

Other relevant courses: Artificial Intelligent, natural language processing, numerical method, data structure

Skills

- Proficient in Python, Java; Experience with C++, Matlab, C, C#, html, Bash, JS, etc.
- Experience with distributed system, distributed computing, big data
- Experience with Spark, Hadoop, OpenGL, OpenCV, TensorFlow, Weka, Caffe, etc.
- Experience with OpenSCAD, Unity, Blender
- Fluent in English and Mandarin
- Git: https://github.com/Ziheng-Liang, https://gitlab.com/qqqwey941008