Shuli Jiang

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Education

Carnegie Mellon University, Pittsburgh, PA
Expected graduation: 05/2020
M.S. Computer Science, GPA: 4.00/4.30

Carnegie Mellon University, Pittsburgh, PA
08/2015 ~ 05/2019
B.S. Computer Science, University Honors, GPA: 3.86/4.00
Minor: Engineering Studies

Research Experience

Deep Multi-view Clustering Using Correlations and Local Connectivity
Submitted to the 24th European Conference on Artificial Intelligence (ECAI 2020)
02/2019 ~ current

- Personal research project working with Prof. Artur Dubrawski and Benedikt Boecking at CMU Auton Lab.
- Designed and developed a new multi-view clustering approach based on local similarities in the individual views, which is under explored in current multi-view clustering literature, and correlations across different views.
- The proposed approach outperforms several state-of-art multi-view clustering approaches, including deep canonical correlation analysis, sparse low rank subspace clustering, etc., on both image and text datasets.

Recognition of PNC Product and Service Usage Pattern
09/2018 ~ 02/2019

- Research project working with Prof. Artur Dubrawski and Jieshi Chen at CMU Auton Lab.
- Applied machine learning models, including regression, time-series analysis, etc. to characterize patterns of customers' banking activities and digital engagement through transactional data from PNC bank.

OtterTune: Automatic Database Management System Tuning
Proceedings of VLDB 2018
11/2017 ~ 08/2018

- Worked with CMU Database Group. Implemented parts of the OtterTune system, which applies Bayesian optimization to automatically tuning database configuration knobs.
- Publication: http://www.vldb.org/pvldb/vol11/p1910-zhang.pdf
- Repo: https://github.com/cmu-db/ottertune

Autonomous Driving in Simulation
10/2018 ~ 05/2019

- Research project working with Prof. Jean Oh.
- Implemented and improved parts of a deep imitation learning based autonomous driving model in CARLA, a simulated environment. The model extracts features from raw pixels of various road scenes using deep convolutional neural network and learns direction and speed controls from those features.
- Collected demonstration data for training the model under supervised learning.

Bayesian Optimization
01/2018~05/2018

- Worked with one of Prof. Barnabas Poczos's PhD students on Bayesian optimization research in a multi-fidelity setting with applications on algorithms hyperparameter tuning.
- Integrated an extension of Gaussian Process with Upper Confidence Bound. Helped set up experiments of comparing the proposed algorithm against other popular hyperparameter tuning algorithms.

Other Projects

Faster YOLOv3 object detection on iOS GPU
03/2019 ~ 05/2019

- Designed and implemented a parallelized version of YOLOv3, a deep learning based object detection algorithm, on iOS GPU using Apple Metal Performance Shader (MPS). The performance of the parallelized YOLOv3 is highly competitive to an optimized CoreML converted version of the same algorithm.

Characterizing Allegheny County Opioid Overdoses
2018 HackAuton Best Show Prize
03/2018 ~ 04/2018

- Worked with two friends. Built an interactive web platform which visualizes characteristics of opioid epidemic and predicts death caused by opioid overdose in Allegheny County, based on real world data and publicly available synthetic electronic medical record (EMR).
- Publication: https://arxiv.org/abs/1804.08830
- Repo: https://github.com/autonlab/2018.hackAuton/tree/master/DeepGirlNetwork

Work Experience

Morgan Stanley, New York City, NY 06/2018 ~ 08/2018
Technology Analyst (Application Development)

- Designed and improved a data quality management system which collects real-time trading data from multiple source databases, detects potential anomalies to ensure data quality and visualizes the detected anomalous data.
- Along with static checks, applied different machine learning models, including regression models, time series models, etc., to capture human intuition in anomaly detection.

PreSenso Ltd., Haifa, Israel 06/2017 ~ 08/2017
Software Engineering Intern

- Developed an anomaly detection benchmark, which evaluates and compares the performance of different anomaly detection algorithms on various patterns of anomalies.
- Researched and categorized different patterns of anomalies in the customer data. Developed a tool for visualizing these patterns.
- Formulated association rules between anomalies seen in different streams of data during the same time period to improve anomaly detection model.

Leadership

US-China Summit on Innovation and Entrepreneurship Director 01/2016 ~ 05/2018

- Led a group of 15 students. Organized and hosted 90-minutes panel talks on popular tech topics by inviting industrial and academic leaders in the field of interest during CMU Summit, an annual three-day activity from 2016 to 2018.

Awards

Buncher Entrepreneurship Award 04/2017
CMU Innovation Scholar 05/2017 ~ 05/2019