Yuyan Wang

yuyanw@andrew.cmu.edu | (+1)412-638-9732 | Operations Research | Carnegie Mellon University

EDUCATION

Carnegie Mellon University   **Aug 2017 -**

Ph.D. in Operations Research, Secondary Master in Machine Learning (GPA: 4.08/4.00)

- Advisor: *Benjamin Moseley*
- Coursework: *Introduction to Machine Learning, Deep & Reinforcement Learning, Statistical Machine Learning, Convex Optimization, Advanced Stochastics and Application, Algorithms, Graph Theory, Linear Programming, Integer Programming*

Tsinghua University   **Aug 2013 - Jul 2017**

B.S. in Industrial Engineering (GPA: 90/100)

- Coursework: *Data Structure and Algorithm Analysis, Probability Theory and Statistics, Calculus, Linear Algebra*

HONORS AND AWARDS

William Larimer Mellon Fellowship   **Sep 2017 -**
Mathematical Contest in Modeling, Finalist Award (1%)   **2016**
Tsinghua Scholarship for Academic Excellence and Scientific Innovation   **2013 - 2014, 2015 - 2016**

INTERNSHIP

Google LLC   *Research Intern*   **May 2020 - Aug 2020**

Host: Alex Fabrikant, Mountain View

- Built a new component for an on-going project for recognizing bus/train trips in the public transit system
- Designed and implemented an algorithm which clusters data reports into trajectories of moving vehicles and predicts future trajectories based on the clustering
- Built a simulation environment that provides online data and trained the model to improve the algorithm efficiency
- Designed multiple metrics for performance evaluation and designed baseline heuristics for comparison

COURSE PROJECTS

Cell Type Classification   **Nov 2017 - Dec 2017**

- Classified types of cells in human body according to their performance on different genes
- Used classification methods like Gaussian Naïve Bayes, Logistic Regression, Ada Boost, Supporting Vector Machine, etc.

OpenAI Gym Deep & Reinforced Learning   **Mar 2018 - Jun 2018**

- Trained agents for better decision making in games from OpenAI gym: CartPole-v0, MountainCar-v0, LunarLander-v2, etc.
- Applied deep and reinforcement learning approaches: MDP, Q-learning, Advantage-Actor Critic (A2C), etc.

New York Taxi Driver Profit Optimization   **Apr 2018 - Jun 2018**

- Simulated the demand environment for taxi drivers using records of yellow cabs in New York
- Used reinforcement learning to optimize individual taxi driver's profit by decision-making based on customer behavior

INTERESTS AND SKILLS

- **Research Interest**: Machine Learning, Data Analysis Methods, Clustering Algorithms
- **Optimization & ML Tools**: CPLEX, Lingo, Cvxpy, Tensorflow, Keras
- **Programming Language**: Python, Matlab, C, C++
- **Platforms and Computing Services**: Colab, Google Cloud

PUBLICATION LIST

[1] Sara Ahmadian, Alessandro Epasto, Marina Knittel, Ravi Kumar, Mohammad Mahdian, Benjamin Moseley, Philip Pham, Sergei Vassilvitskii, and Yuyan Wang. "Fair Hierarchical Clustering". NeurIPS 2020. Paper link

[2] Benjamin Moseley, and Yuyan Wang. "An Objective for Hierarchical Clustering in Euclidean Space and Its Connection to Bisecting K-means". AAAI. 2020. Paper link

[3] *[Preprint]* Benjamin Moseley, Kirk Pruhs, Alireza Samadian, and Yuyan Wang. "Relational Algorithms for k-means Clustering". In Submission. Paper link

[4] Benjamin Moseley, Sergei Vassilvitskii, and Yuyan Wang. "Hierarchical Clustering in General Metric Spaces using Approximate Nearest Neighbors". In Submission.

[5] Thomas Lavastida, Kefu Lu, Benjamin Moseley, and Yuyan Wang. "Scaling Average-Linkage via Sparse Cluster Embeddings". In Submission.

[6] Yuyan Wang, Senaka Buthpitiya, and Alex Fabrikant. "Zebra regression: estimating motion of periodically-emittedparticles from unlabeled sightings". In Submission.