Wufei (Mofii) Ma

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EDUCATION

Rensselaer Polytechnic Institute *Jan. 2017 - Present*
B.S. in Computer Science *Troy, NY*
B.S. in Mathematics
- GPA: 3.91 / 4.0
- Dean's Honor List: Spring 17, Fall 17, Spring 18, Fall 18, Spring 19
- Outstanding Performance Nominated: Spring 18 (Prof. David Goldschmidt), Spring 19 (Prof. Lirong Xia)

Columbia University *May 2017 – Aug. 2017*
Summer Session in Computer Science *New York, NY*
- GPA: 4.0 / 4.0

Wuhan University *(Transferred to RPI)* *Sept. 2015 – Nov. 2016*
B.S. in Mathematics *Wuhan, China*
- GPA: 3.4 / 4.0
- Undergraduate Scholarship from Ministry of Education of China

RESEARCH WORK

Preference Learning from Natural Languages *Sept. 2019 - Present*
Undergraduate Research Assistant *Department of Computer Science, RPI*
Mentor: Prof. Lirong Xia
- Collect or generate training data from Slack and Reddit discussions about different targets
- Apply pretrained sentiment and stance analysis models on the discussions
- Train models to learn agents' preference rankings from people's discussions in English

Driving Anger Detection with CNN *Jun. – Aug. 2019*
Machine Learning Engineer *Remote*
Mentor: Dr. Bowen Cai
- Collect 20 drivers' facial expressions under different emotions: relaxed, angry, sleepy, etc.
- Build an integrated computer vision model composed of pattern recognition and 14 layers of deep convolutional neural network to recognize and analyze driver anger emotion status

Predicting the Metastasis of Breast Cancer from a Computer Vision Approach
May 2019 - Present
Machine Learning Engineer *Data Science Research Center*
Mentor: Prof. Bülent Yener
- Apply image segmentation on the photos of dyed cancer tissue and normal tissue samples
- Characterize the distribution of different cells by building cell graphs
- *Predict whether the cancer sample is metastatic based on different properties of the graphs (planned)*

High-level Materials Properties Analysis with CGAN *Apr. 2019 - Present*
Machine Learning Engineer *Data Science Research Center*
Mentor: Prof. Bülent Yener
- Build conditional GAN models to generate synthetic microstructure images using the materials properties and texture properties as the generative conditions
- Characterize microstructures by constructing high-level computer vision features and further predicting the material science features
- Build a kinetic model to quantify computer vision features over 5 classes

RESEARCH WORK *(cont.)*

Microstructure Characterization with Deep Learning *Sept. 2018 - Mar. 2019*
Machine Learning Engineer *Data Science Research Center*
Mentor: Prof. Bülent Yener
- Characterize properties of different microstructures using CNN and texture statistics
- Build image segmentation pipelines to quantify different microstructures across five phases

PUBLICATIONS

An image-driven machine learning approach to kinetic modeling of a discontinuous precipitation reaction
- Submitted for *Materials Characterization* (under peer review); preprinted on arXiv.

PROJECT EXPERIENCE

Face Image Generator with FaceGen* *May – Jun. 2019*
Machine Learning Engineer *Intelligent System Laboratory*
Mentor: Prof. Qiang Ji
- Create an autonomous program to generate face images for training and testing based on face features (age, gender, race, shape features) and facial expressions based on action units
- Generate 3-D graphics models from real-world images by adding guideline points

* *FaceGen is a 3-D face rendering software working as the backend of this project*

Web App for Wikimania 2017 *Jul. – Aug. 2017*
Web Developer *New York, NY*
- Create an official web app for the yearly Wikimania Conference for meeting schedules, dining plans, and transportation during the conference (team of 2)
- Developed real-life projects on large-scale web servers

LEADERSHIP EXPERIENCE

Soccer Team, College of Mathematics *Sept. 2015 – Nov. 2016*
Captain *Wuhan, China*
- Enter semi-final and quarter-final of WHU Soccer Competition in 2015 and 2016, out of 32
- Host weekly training and organized friendly matches every month

Shanghai High School Rubik's Cube Club *Jan. – Dec. 2014*
President *Shanghai, China*
- Host weekly tutorials or workshops for different variations of Rubik's Cubes
- Host monthly competitions and have more than 80 new students joining our club

SKILLS & OTHERS

- **Programming:** Python, MATLAB, Java, C++
- **Skills:** Operation Research, Web Scrapping, Linux, Apache Server, Flask
- **Coursera:** Machine Learning, Deep Learning, Introduction to Cyber Attacks
- **Service**: TensorFlow Localization Team Reviewer