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Ruizhi Deng

Education

Sep. 2017– Present **Simon Fraser University**, *Burnaby, BC Canada*.
- Master of Science in Computing Science. *GPA:* 4.07/4.33
- Advisor: Dr. Greg Mori
- Selected Courses: CMPT 829 - Special Topics in Bioinformatics, CMPT 888 - Computational Photography

Sep. 2013– Dec. 2016 **The University of Michigan - Ann Arbor**, *Ann Arbor, MI*.
- Bachelor of Science in Mathematics, Minor in Computer Science. *GPA:* 3.85/4.0
- Graduated with High Honor.
- Research Advidor: Dr. Honglak Lee.
- Selected Courses: EECS 545 - Machine Learning, EECS 442 - Computer Vision, STATS 620 - Applied Probability and Stochastic Modeling, MATH 597 - Real Analysis

Research Interests and Experience

I'm interested in studying fundamental problems in machine learning. Currently, my research focus is adversarial machine learning. I also have have past experience and on-going work on neural network architecture design and generative models.

Publication

2018 **Characterize Adversarial Examples Based on Spatial Consistency Information for Semantic Segmentation**
Accepted to ECCV 2018 [PDF]
Chaowei Xiao, **Ruizhi Deng**, Bo Li, Fisher Yu, Mingyan Liu, Dawn Song

2018 **Sparsely Aggregated Convolutional Networks**
Accepted to ECCV 2018 [PDF] [project page]
Ligeng Zhu, **Ruizhi Deng**, Michael Maire, Zhiwei Deng, Greg Mori, Ping Tan

2018 **Adaptive Appearance Rendering**
Accepted to BMVC 2018 PDF coming soon
Mengyao Zhai, **Ruizhi Deng**, Jiacheng Chen, Lei Chen, Zhiwei Deng, Greg Mori

2017 **Learning to Forecast Videos of Human Activity with Multi-granularity Models and Adaptive Rendering**.
ArXiv Prepreint [PDF]
Mengyao Zhai, Jiacheng Chen, **Ruizhi Deng**, Ligeng Zhu, Lei Chen, Greg Mori

Professional Experience

Research

Sep. 2017– Present **Research Assistant**, *School of Computing Science, Simon Fraser University*, Burnaby.

Supervised by Dr. Greg Mori.

- Adaptive human image rendering based on disentangled representations of pose and appearance.
- Future video frame prediction based on multi-granunality representations.
- Improving the parameter-performance efficiency of Densely Connected Convolutional Networks with sparse skip connections.
- Characterizing adversarial examples for recognition models based on spatial and temporal consistency.
- Human skeleton generation and completion with dynamic graph neural network and inverse reinforcement learning.

Feb. 2016– Dec. 2016 **Research Assistant**, *EECS Department, The University of Michigan*, Ann Arbor.

Supervised by Dr. Honglak Lee.

- Interactive semantic segmentation using Fully Convolutional Networks.
- Wound segmentation on medical images with recurrent neural networks and fully connected conditional random field.
- Contributing to developing a mobile application for wound segmentation and area estimation using images taken by cell phones.

Industry

Mar. 2017– May. 2017 **General Software Engineer Intern**, *TuSimple*, San Diego.

Supervised by Dr. Panqu Wang

- Video semantic segmentation stabilization with optical flow.
- Car and pedestrian contour detection.
- Curb detection in 3D point cloud.

Skills

Programming Languages: Python, MATLAB, C/C++, LaTeX, Markdown, Bash

Library and Tools: PyTorch, Tensorflow, OpenCV, scikit-learn, MxNet, Caffe

Honors and Awards

2017	Graduate Fellowship	Simon Fraser University
2015, 2017	James B. Angell Scholar	The University of Michigan, Ann Arbor
2016	Graduate with High Distinction	The University of Michigan, Ann Arbor
2013 -2015	University Honors	The University of Michigan, Ann Arbor