Ruizhi Deng

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Education

Aug. 2019–Present
Simon Fraser University, *Burnaby, BC Canada*.
- Doctor of Philosophy in Computing Science.
- Advisor: Dr. Greg Mori

Sep. 2017–Aug. 2019
Simon Fraser University, *Burnaby, BC Canada*.
- Master of Science in Computing Science. *GPA:* 4.07/4.33
- Advisor: Dr. Greg Mori

Sep. 2013–Dec. 2016
University of Michigan - Ann Arbor, *Ann Arbor, MI USA*.
- Bachelor of Science in Mathematics, Minor in Computer Science. *GPA:* 3.85/4.0
- Graduated with High Honor.
- Research Advidor: Dr. Honglak Lee.

Research Interests and Experience

I'm interested in fundamental problems in machine learning. More specifically, my research is focused on the intersection of variational Bayes method, generative modeling, and the applications to time series data. Meanwhile I'm also studying adversarial machine learning and developing robust defense against adversarial attacks.

Conference Publications

2020
Modeling Continuous Stochastic Processes with Dynamic Normalizing Flows
Accepted to NeurIPS 2020, ICML 2020 INNF+ Workshop(oral presentation) [PDF]
Ruizhi Deng, Bo Chang, Marcus Brubaker, Greg Mori, Andreas Lehrmann

2019
advIT: Adversarial Frames Identifier Based on Temporal Consistency In Videos
Accepted to ICCV 2019 [PDF]
Chaowei Xiao, **Ruizhi Deng**, Bo Li, Taesung Lee, Benjamin Edwards, Jinfeng Yi, Dawn Song, Mingyan Liu, Ian Molloy

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

ArXiv Preprints

2019 **Variational Hyper RNN for Sequence Modeling**
arXiv preprint [PDF]
Ruizhi Deng, Yanshuai Cao, Bo Chang, Leonid Sigal, Greg Mori, Marcus Brubaker

2019 **Point Process Flows**
arXiv preprint [PDF]
Nazanin Mehrasa*, **Ruizhi Deng***, Mohamed Osama Ahmed, Bo Chang, Jiawei He,Thibaut Durand, Marcus Brubaker, Greg Mori
∗ denotes equal contribution.

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

Industry

Aug. 2019– Present **Machine Learning Research Intern**, *Borealis AI*, Vancouver.
Supervised by Dr. Andreas Lehrmann.
- Proposing and studying a normalizing flow model that transforms continuous-time stochastic processes and its application to irregularly-sampled time series data.
- An paper accepted to NeurIPS 2020 and ICML 2020 INNF+ Workshop based on work during internship.

Feb. 2019– May 2019 **Machine Learning Research Intern**, *Borealis AI*, Toronto.
Supervised by Dr. Yanshuai Cao.
- Proposal and implementation of an RNN model that is able to dynamically generate weights based on the context and current observation when modeling sequential data.
- An anomymouns submission to NeurIPS 2019 based on work during internship.

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.

Research

Feb. 2016– Dec. 2016 **Research Assistant**, *EECS Department, 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.

Academia Service

Conference Reviewer: ICLR 2020

▬▬▬ Skills

Programming Languages: Python, MATLAB, C/C++, LaTeX, Markdown, Bash
Library and Tools: PyTorch, Tensorflow, OpenCV, scikit-learn, MxNet, Caffe

▬▬▬ Honors and Awards

2019, 2020	Graduate Fellowship	Simon Fraser University
2017	Graduate Fellowship	Simon Fraser University
2015, 2017	James B. Angell Scholar	University of Michigan, Ann Arbor
2016	Graduate with High Distinction	University of Michigan, Ann Arbor
2013 -2015	University Honors	University of Michigan, Ann Arbor