Bicheng Xu

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EDUCATION

University of British Columbia (UBC) **Vancouver, Canada**
Doctor of Philosophy (Ph.D.) in Computer Science *Present*
- Supervisor: Prof. Leonid Sigal

University of British Columbia (UBC) **Vancouver, Canada**
Master of Science in Computer Science *2020*
- Supervisor: Prof. Leonid Sigal
- Grade: 95/100

Simon Fraser University (SFU) **Burnaby, Canada**
Bachelor of Science in Applied Sciences (with Distinction) *2017*
- Major: Computing Science (Dual Degree Program with ZJU)
- Minor: Mathematics
- GPA: 3.97/4.33

Zhejiang University (ZJU) **Hangzhou, China**
Bachelor of Engineering *2017*
- Major: Computer Science and Technology (Dual Degree Program with SFU)
- GPA: 3.73/4.00

PUBLICATIONS

Consistent Multiple Sequence Decoding
- **B. Xu**, L. Sigal
- *arXiv preprint arXiv:2004.00760*, 2020

Watch, Listen and Tell: Multi-modal Weakly Supervised Dense Event Captioning
- T. Rahman, **B. Xu**, L. Sigal
- *IEEE/CVF International Conference on Computer Vision (ICCV)*, 2019

Time Perception Machine: Temporal Point Processes for the When, Where and What of Activity Prediction
- Y. Zhong, **B. Xu**, G.-T. Zhou, L. Bornn, G. Mori
- *arXiv preprint arXiv:1808.04063*, 2018

RESEARCH EXPERIENCES

Computer Vision Lab **UBC**
Research Assistant *2018*
- Explored image captioning in a semi-supervised setting
- Employed the idea of self-reconstruction and cycle-reconstruction to utilize the unlabelled images and sentences

Vision and Media Lab **SFU**
Research Assistant *2017*
- Carried out research on group activity recognition in videos
- Combined VGG net, recurrent neural network, and connectionist temporal classification (CTC) to recognize a sequence of activities performed by a group of people in a video through supervised learning

Computational Vision Lab **SFU**
Part-time Research Assistant *2016*
- Used Caffe framework to explore the color prediction problem
- Given the information of two lights and the color of one pixel under one light, predicted the color of the same pixel under the other light

Network Modelling Lab **SFU**
Part-time Research Assistant *2015*
- Researched on bus tracking and arrival time prediction in urban environments based on Wi-Fi sensing
- Explored the problem about indoor localization using cellphone's Wi-Fi detection and sensors of light, magnetic field and acceleration
- Programmed on Android platform

WORK EXPERIENCES

Ericsson Canada Inc. **Burnaby, Canada**
Software Developer Coop - IP Operating System Team *2015*
- Implemented packets' incoming rate check feature for line cards according to different router platforms using C programming language
- Designed and implemented test cases for packets' incoming and outgoing rate check functions for line cards

COURSE-RELATED PROJECTS

Lyric Generation with Style *2019*
Main Contributor
- Built a GAN-like neural network model to generate lyric given a style and a topic
- Proposed a novel hierarchical structure for both lyric generation and encoding
- Presented two different evaluation methods to quantitatively measure the authenticity of the generated lyric

Semi-supervised Image Captioning via Reconstruction *2018*
Project Leader
- Proposed an end-to-end model that can generate image captions in a semi-supervised way
- Adopted the idea of reconstruction to utilize images without paired captions

Handwritten Chinese Character Generation via Neural Generative Models *2018*
Major Contributor
- Exploited generative adversarial networks (GAN), variational auto-encoders (VAE), and their combinations to generate handwritten Chinese characters conditioned on their GBK encodings
- Used PyTorch library to build the neural network models

Evaluating Visual Perception with Bouncing Motion *2017*
Main Investigator
- Designed a perceptual experiment and developed a novel interactive interface that supports to investigate human perception to bouncing motions
- Validated the experiment design and the interface in piloting studies, providing insights to the theory of perception and physical simulation

Distributed File System with Transactional Semantics *2016*
Software Designer and Developer
- Implemented a distributed file system with transactional semantics following the properties of Atomicity, Consistency, Isolation, and Durability using Java
- Handled omission, byzantine and failstop failures on the client and failstop failures on the server