# Bicheng Xu

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## EDUCATION

**University of British Columbia (UBC)** **Vancouver, Canada**
*Master of Science in Computer Science* *Present*
- Supervisor: Prof. Leonid Sigal
- Grade: 95/100
- Awards: 2018-2019, 2017-2018 International Tuition Award

**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
- Awards: 2016 Fall Undergraduate Open Scholarship; 2016 Summer VP Research - Undergraduate Student Research Award - Science; 2016 Spring Undergraduate Open Scholarship; 2014 Fall SFU Zu Ddp Entrance Awards

**Zhejiang University (ZJU)** **Hangzhou, China**
*Bachelor of Engineering* *2017*
- Major: Computer Science and Technology (Dual Degree Program with SFU)
- GPA: 3.73/4.00
- Awards: 2015 Second-Class Volunteer Award

## 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* *Present*
- 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