

Jiacheng(Jaycee) Chen

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Overview

- Solid programming skills in **C/C++**, **Python** with rich project experience
- Deep interest in computer vision and distributed computing, familiar with deep learning frameworks **Tensorflow**, **Pytorch** and distributed frameworks **Hadoop**, **Spark**
- Rich experience with common tools including **Git**, **Latex**, **Matlab**, etc.

Education

- 2016-Present **Simon Fraser University**, *Bunaby*, BC, Canada.
B.Sc in Computing Science, Dual Degree Program, GPA: 4.17/4.33
- 2014-Present **Zhejiang University**, *Hangzhou*, Zhejiang, China.
B.Sc in Computer Science and Technology, GPA: 3.93/4.0

Research Experience

- May 2017- **Research Assistant**,
VML Lab, Simon Fraser University, Advisor: Prof.Greg Mori.
Research in computer vision and deep learning
- Researched on video analysis, especially human action analysis including human trajectory and human pose
 - Researched on the forecasting of human activity, and also on generative models for generating controllable images
 - Designed and implemented a framework for multi-person future forecasting and applied it on complex sports forecasting
 - Extracted pose sequences for *Volleyball Dataset*, which is a common dataset for group activity recognition
- Sept 2017- **Research Assistant**,
Big Data Research Project, Simon Fraser University, Advisor: Prof.Ryan Shea.
Research in distributed computing system integrated with computer vision
- Designed a distributed and general-case visual computing system for large-scale line-rate video processing based on Spark Streaming, FFMPEG, and OpenCV
 - Implemented and deployed the proposed visual computing system on SFU Cloud
 - Applied our scalable system to real-time vehicle monitoring taking use of SSD detector, which monitors cars and buses entering SFU Burnaby campus

Publication and Manuscript

- Dec 2017 **Learning to Forecast Videos of Human Activity with Multi-granularity Models and Adaptive Rendering**,
Mengyao Zhai, [Jiacheng Chen](#), Ruizhi Deng, Ligeng Zhu, Lei Chen and Greg Mori,
ArXiv Preprint.
Proposed a hierarchical framework for forecasting complex human videos

Honours and Awards

- 2017 **Meritorious Prize**, *Mathematical Contest in Modeling(MCM)*.
- Top 7% in all participants of the competition
 - Implemented a Cellular Automata for simulating and analyzing highway traffic flow
- 2017 **First Class Entrance Scholarship**, *Simon Fraser University*.
The scholarship rewards top 10% students in SFU-ZJU Dual Degree Program
- 2016 **First Prize Academic Scholarship**, *Zhejiang University*.
The scholarship rewards the top 5% student according to academic behavior

Selected Projects

- April 2017 **Action Recognition Exploration**, *Github link*.
- Explored and Implemented a bunch of popular deep-learning-based human action recognition models including two-stream CNN(RGB and Optical Flow), C3D, LRCN, etc.
 - Implemented a Web app in which local and online videos can be imported and recognized.
- Dec 2016 **Color-Consistent Vegetable Classifier**.
- Trained a CNN classifier based on pre-trained ResNet-50 model for identifying among 50 different kinds of fruits and vegetables with over 60% top-1 accuracy
 - Applied a logarithmic preprocessing technique to enhance the model's stability under different light environments
 - Implemented a web application for the classifier with Django to make it both accessible for desktop and mobile users
- Oct 2016 **Basic Shell**, *Github link*.
- Implemented a shell(for Linux) with C and system calls which simulates the functionality of bash
 - Implemented pipe using inter-process communication to make the shell support complex and integrated commands
- Sept 2016 **SFU Wechat Assistant**, *Github link*.
- Built up a Wechat intelligent assistant for reporting SFU calendar automatically by sending notifications about classes and other important events
 - Deployed the assistant on our VPS and made it accessible to everyone who subscribes our public Wechat account
- June 2016 **MiniSQL**, *Github link*.
- Designed a mini database system using Python and successfully passed MySQL-based test cases
 - Conducted unit test on core modules with automatic testing tools to maintain the quality of the code
 - Implemented a SQL interpreter with PLY and Backus Normal Form to parse SQL language
- Feb 2016 **FPGA Greedy Snake Game**.
- Implemented the classic greedy snake game on FPGA using Verilog HDL
 - Created different patterns by plotting bitmaps to prettify the game with the theme of Pac-Man
 - Designed algorithms based on geometrical principles for controlling the shape of snake while moving and rotating