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**, *Bunarby*, 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 the analysis and prediction 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
- Built up a distributed computing system for large-scale video processing based on Spark Streaming, FFMPEG, OpenCV
- Analyzed the efficiency and energy performance of proposed system on SFU Cloud?s 8-node cluster
- Deployed our scalable system on SFU Cloud cluster in Burnaby campus for real-time vehicle monitoring

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.
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*.
- Implemented an intelligent deep-learning-based human action recognizer which can be accessed from browser to recognize the videos from local files
- Used Tensorflow to build a two-stream neural network for high-accuracy recognition as part of the backend of the app

Dec 2016 **Intelligent Vegetable Classifier**.
- Created an intelligent classifier based on state-of-art convolutional neural network to identify among 50 different kinds of fruits and vegetables with over 50% top-1 accuracy
- Referred to several related papers on color constancy and applied a special 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*.
- Created a shell with C and system calls to simulate the performance of bash
- Implemented pipe using inter-process communication to make the shell support more complex and integrated commands
- Achieved functionality of job control by dealing with internal signals and enabled users to manage their tasks easily and efficiently

Sept 2016 **SFU Wechat Assistant**, *Github link*.
- Built an Wechat assistant cooperated with another developer for reporting SFU calendar automatically by sending notifications about courses and events
- Deployed the assistant on our VPS so that it can be used by anyone who subscribes our corresponding public Wechat account

June 2016 **MiniSQL**, *Github link*.
- Designed a mini database system using Python with a group of three and successfully passed MySQL-based test cases
- Applied unittest on core modules with automatic testing tools to guarantee high quality of the code
- Implemented a SQL interpreter with PLY and Backus Normal Form to parse SQL language
- Implemented record manager with efficient data structures to manipulate massive conversion between database records and binary data efficiently

Feb 2016 **FPGA Greedy Snake Game**, *Github link*.
- Implemented the classic snake game on FPGA with Verilog HDL and enabled players to play it on any device with VGA port
- Created different patterns by plotting bitmaps to prettify the game with the theme of Pac-Man
- Designed algorithm based on geometrical principles to keep the shape of snake while moving and rotating