Binyao Jiang

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Education

University of Illinois at Urbana-Champaign (UIUC), Champaign, IL **[09/2019 – 05/2021]**

M.S. in Computer Science

Shanghai Jiao Tong University (SJTU), Shanghai, China **[09/2015 – 06/2019]**

B.S.E. in Computer Science

- Overall GPA: 3.85/4.0 Major GPA: 3.97/4.0 Rank: 4/142
- Awarded **Zhiyuan Honor Degree** of Bachelor of Engineering.

Work Experiences

Internship at Microsoft: Linux FPGA High Performance Driver **[07/2018 – 01/2019]**

- Designed and implemented the ring-buffer communication interface with high throughput and low latency, including the features about kernel bypass and interrupt support in user space. Achieved **25Mpps** throughput with a small batch size.
- Integrated into RocksDB and FIO (Flexible I/O tester) to show system's performance under different workloads.
- Integrated into revised Caffe where JPEG decoding is offloaded to FPGA. Training with one NVIDIA P100 GPU, approximately **7 CPU cores** could be saved. Published in **ACM ICPP** 2019.

Research Assistant at SJTU Intelligent IoT Lab: QR Codes Batch Reading APP **[05/2018 – 07/2018]**

- Presented a lightweight IFFT based QR code detection algorithm to identify each code in the batch QR codes image.
- Accelerated with parallel computing framework RenderScript leveraging CPU and GPU's multiple core attributes which makes detection **14x** faster.
- Proposed an effective QR code tracking mechanism in preview mode, where decoding accuracy can converge to nearly **100%** and processing time can converge to **50%** of the origin.
- Implemented all the mentioned features to an Android APP which is capable of reading 1-160 Version 1-H QR codes in batch with mostly **~95%** accuracy in **100-400ms**. Published as the first author in **IEEE INFOCOM** 2019.

Project Experiences

Raspberry Pi Based System Development **[03/2018 – 06/2018]**

- Utilized **Face++ API** to detect user's emotion and gesture. Designed a smart music player upon Raspberry Pi capable of reacting to user's emotion and gesture changes.
- Developed Raspberry Pi as a WeChat Official Account server which replies to user's input with relevant news and products crawled by **Beautiful Soup** in Python.

Spam Messages Visualization System **[03/2018 – 06/2018]**

- Designed a full-stack system to visualize the time-space distribution of spam messages.
- Developed UI based on **D3.js**, **jQuery** and **Baidu Map API**, and server side based on **Tornado**.

Interactive Video Object Selection **[09/2017 – 12/2017]**

- Extended **Fully Convolutional Network**'s input by adding a user's selection mask.
- Combined optical flows and contour maps of moving objects into our Fully Convolutional Network model.
- Implemented GUI (**PyQt5**) to process the user's input and display the video segmentation results.

Awards & Honors

Award of Excellence in Microsoft Research Asia Internship Program **[2019]**

Best Mobile App Award in ACM MobiCom 2018 App Competition **[2018]**

National Scholarship **[2016, 2017]**

Academic Excellence Scholarship (Type A) **[2016]**

Technical Skills

- **Programming Languages:** C/C++, Python, Java, Matlab, HTML/CSS/JavaScript, Verilog.
- **Tools:** Linux, Android SDK, Git, RenderScript, OpenCV, Caffe, Bash, Latex, Markdown.