Shengbin Meng

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Education

Peking University **Beijing, China**
Ph.D., Computer Science *2011.09 - 2016.07*
- Research areas: video coding, processing and streaming, codec implementation and optimization.
- Awards: Tencent Innovation Scholarship in 2014, Outstanding Student Award in 2015.

Tsinghua University **Beijing, China**
B.E., Electronic Engineering *2007.09 - 2011.07*
- Awards: First Class Scholarship in both 2008 and 2009, Third Prize in the 25th China Undergraduate Physics Contest.

Intern Experience

Strongene Co., Ltd. **Beijing, China**
Software Development *2015.08 - Now*
- Developing iOS and Android apps that broadcast live videos. Responsible for capturing, coding, and multiplexing the audio/video data.
- This is a startup company of our research group. I am also the main developer of its HEVC/H.265 decoder for iOS and Android, available at http://strongene.com/en/downloads/downloadCenter.jsp.

Intel Corporation **Beijing, China**
Software Development *2013.11 - 2014.04*
- Optimizing HEVC/H.265 codec for the Atom processor and Android platform. Developed a video recorder app, a video transcoder app, and a video player app using the FFmpeg framework and the optimized encoder and decoder.

China Unicom Research Institute **Beijing, China**
Research *2012.09 - 2013.06*
- Designing and implementing algorithms for scalable video streaming. Integrated novel algorithms into the Darwin Streaming Server and wrote two research papers on that basis.

Jiangsu Jingchuang Electric Co., Ltd. **Jiangsu, China**
Research & Development *2010.07 - 2010.09*
- Applying touchscreen technology to the company's temperature controller products. Designed a PCB with one MCU and several ICs, implemented software for the board and finished a working demo.

Publications

Papers:
- **Shengbin Meng**, Jun Sun, Yizhou Duan, Zongming Guo, Adaptive Video Streaming with Optimized Bitstream Extraction and PID-based Quality Control, IEEE Transaction on Multimedia (TMM), accepted journal paper, to be published in 2016.
- **Shengbin Meng**, Jun Sun, Zongming Guo, Software Solution for HEVC Encoding and Decoding, International Conference on Multimedia Modeling (MMM), Sydney, Australia, January 5-7, 2015.
- **Shengbin Meng**, Yizhou Duan, Jun Sun, Zongming Guo, Highly Optimized Implementation of HEVC Decoder for General Processors, IEEE International Workshop on Multimedia Signal Processing (MMSP), Jakarta, Indonesia, September 22-24, 2014.
- **Shengbin Meng**, Jun Sun, Yilei Wang, Zongming Guo, A PID-based Quality Control Algorithm for

SVC Video Streaming, IEEE International Conference on Communications (ICC), Sydney, Australia, June 10-14, 2014.

- **Shengbin Meng**, Jun Sun, Yizhou Duan, Zongming Guo, An Efficient Method For No-Reference H.264/SVC Bitstream Extraction, IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Florence, Italy, May 4-9, 2014.
- **Shengbin Meng**, Scalable Video Coding and High Efficiency Video Coding (in Chinese), International Conference on Technology Convergence (ICTC), Hangzhou, China, October 30 – November 2, 2015.

Patents:

- **Shengbin Meng**, Jun Sun, Yizhou Duan, Zongming Guo, Method and apparatus for controlling the video quality in a VoD system, patent pending, No. 201410428958.0.
- Sen Liu, **Shengbin Meng**, Jun Sun, Zongming Guo, A state-based quality control method for DASH, patent pending, No. 201510231060.9.
- Jiexi Wang, **Shengbin Meng**, Jun Sun, Zongming Guo, Method and apparatus for interactive live video streaming based on WebRTC, patent pending, No. 201510230757.4.

Projects

(Some personal projects other than those in my intern experience are listed here.)

ParallelEncoder

- A video encoder that utilizes a multi-process framework to increase the degree of parallelism. Video frames are dispatched to multiple encoder processes for encoding, and the results are collected and then merged together. Shared memory is used for efficient inter-process communication

CarDetector

- A GUI application to find and mark cars in an image. A sliding window method is utilized to search for rectangular areas containing a car, with Histogram of Oriented Gradient (HOG) as the area feature descriptor and a trained Support Vector Machine (SVM) as the classifier.

HLSServer

- A server program that accepts TS file segments and creates an m3u8 file used for HTTP live streaming.

BranchPredictor

- A course project that simulates the branch prediction process in the dynamic scheduling of CPU.

Skills

- **Programming:** C/C++/ Objective-C, Java, MATLAB, PHP; experience in SIMD optimization for ARM and x86; published several apps in App Store and Google Play.
- **Research:** Familiar with information theory and quantization technology, solid research foundation in the areas of video coding, processing and streaming.
- **Writing:** Good at writing documents and articles; have maintained a regularly updated blog.
- **Language:** Chinese (native speaker), English (professional working proficiency).