

Pei QING

+86 186-2111-0317

hi@qingpei.me

https://www.qingpei.me

edwardtoday

Education

- 2011–2012 **M.Sc. in Software Technology**, *The Hong Kong Polytechnic University*, GPA:3.95/4 with Distinction.
- 2006–2010 **B.Eng. in Computer Science and Technology**, *Tsinghua University*, Beijing, GPA:85/100.
- 2007–2010 **B.S. in Economics**, *Tsinghua University*, Beijing, dual degree.

Working Experience

- 2013–present **Software Engineer**, *Shanghai Sansi Technology Co., Ltd.*, Shanghai.
- Smart bulb iOS app. First working demo in 32 days including learning Objective-C for 2 weeks.
 - Networking module of LED display/lamp control system. Unified interface for TCP/UDP/RS-485 controllers. **6X higher throughput** than previous version by asynchronous design.
 - Display calibration toolkit optimization. **30X faster** pixel searching. Better perceived uniformity.
 - Advocated the adoption of Git, GitLab & Redmine within the group.
 - Converted 9 low-utilization physical servers to a more maintainable virtual machine.
- 2012–2013 **Research Assistant**, *Biometrics Research Center, The Hong Kong Polytechnic University*.
- Data Source:** Samples of pulse, electrocardiogram, tongue photo, front face photo and breath composition analysis results from both healthy and diabetes people.
- Objective:** To discover if some disease (diabetes in this case) has strong correlation with multiple physical signs of human body. Build a diagnosis model bases on the correlation to improve accuracy and consistency of diagnoses.
- Methodology:** Iterations of "Feature Extraction → Fusion of Multiple Features → Feature Optimization → Machine Learning → Model Simplification" process.
- Current Status:** We achieved an **accuracy of 97.1%** of diabetes diagnosis. By contrast, the accuracy using a single source of physical signs were 65% to 90%. Thus we have lowered the mis-diagnosis rate by roughly an order of magnitude.
- 2010–2011 **Software Developer**, *Virtuos Games*, Shanghai.
- Architected and implemented a cross-platform game for PC/Mac/iPhone/iPad. Optimized the graphics performance from **14FPS to 31FPS** on iPhone 4.
 - Designed synchronization tool with C++/Python to support inter-department process.
- 2008 **Volunteer, Assistant Officer**, *International Broadcast Center, 29th Olympic Games*, Beijing.
- Collected needs from agents of different media. Contact officers from inside IBC to meet their needs, or turn to Director for request necessary resources.
 - Administrated attendance system of the venue, sending daily report on venue operations status.

Personal Projects

- 2013 **image-converter-for-kindle: Convert JPEG images to kindle screensavers**, *Python*.
Resize, crop, rotate and optimize images for the e-ink screen on Kindle.

- 2013 **mymaxim: Show random maxim in my blog posts**, *Javascript*.
A script that shows random maxims on my personal site.
- 2012 **hkputhesis: The Hong Kong Polytechnic University M.Sc. thesis latex template**, *L^AT_EX*.
No one has ever made such a template for HKPU thesis. While I was writing my M.Sc. dissertation, I wrote the template and open-sourced it in case someone needed them in the future.
- 2011–2012 **3D Palm-print Recognition**, *MATLAB*.
 - Achieved a **worldwide leading 98.7%** identification accuracy using 3D palm-print features. (Accuracies found in previous literature were less than 93%.)
 - 2X speedup (compared to searching sorted database) gained by utilizing 3D global feature index.
- 2010 **Real-time Parallel Decoding of Multi-view Video**, C++, Adviser: Lifeng Sun, *Scoring 93/100, top 10%*.
 - Involved in the scheduling algorithm design for dual-view to 8-view MVC video.
 - Assisted to implement a MVC enc/decoding tool, focusing on the decoding.
 - Designed and implemented a 3D MVC player on the NVIDIA 3D Vision platform.
 - Adopted by CCTV to provide experimental 3D online broadcasting of the 2010 Asian Games.
- 2010 **MIPS CPU Simulator**, *Java*.
 - A simulator that reads assembly code and illustrates how a MIPS CPU executes it.
 - States of all registers and memory spaces can be shown.
- 2009 **Ray-tracing Renderer and Mesh Simplification**, C++, Computer Graphics course project, ranked 6/90+ students.
 - Implemented a C++ ray-tracing renderer with Phong model.
 - **Top 10%** by rendering speed in class.
 - Implemented both vertex decimation and edge contraction algorithms to simplify a mesh to a customizable complexity.
 - Provided real-time preview of simplification progress with OpenGL.
- 2008 **16-bit FPGA MIPS CPU**, *VHDL*.
 - Designed a five-step pipelining structure.
 - Implemented a processor in VHDL.
 - Drove several peripherals including audio and video output.
 - Processor frequency can be up to 50MHz on Cyclone II FPGA.
 - Worked as a team leader.

Publications and Patents

B. Zhang, W. Li, P. Qing, and D. Zhang, "Palm-print classification by global features," *Systems, Man, and Cybernetics: Systems, IEEE Transactions on*, vol. 43, no. 2, pp. 370–378, 2013.

L. Bai, C. Chen, S. Qiao, X. Liu, Y. Song, R. Chen, D. Yu, J. Liu, L. Yu, C. Jia, J. Li, X. Fan, W. Qin, T. Li, Y. Jiang, Q. Zhang, and P. Qing, "Street lamp equipment," China Patent CN106 641 933A, May 10, 2017. [Online]. Available: <https://www.patenthub.cn/patent/CN106641933A.html>

L. Bai, C. Chen, S. Qiao, X. Liu, Y. Song, D. Yu, R. Chen, C. Jia, L. Yu, Y. Li, J. Liu, Y. Jiang, Q. Zhang, and P. Qing, "Streetlight charging pile, and parking space management method, apparatus, and system thereof," China Patent CN106 781 644A, May 31, 2017. [Online]. Available: <https://www.patenthub.cn/patent/CN106781644A.html>

L. Bai, C. Chen, S. Xu, S. Qiao, X. Liu, Y. Song, D. Yu, R. Chen, L. Yu, J. Liu, C. Jia, Y. Jiang, Q. Zhang, and P. Qing, "Street lamp equipment box," China Patent CN206 222 158U, Jun. 06, 2017. [Online]. Available: <https://www.patenthub.cn/patent/CN206222158U.html>

Y. Jiang, F. Zhou, P. Qing, and Y. Shuai, "Smart lighting system, smart vehicle and driver assistant system and method thereof," China Patent CN107 274 695A, Oct. 20, 2017. [Online]. Available: <https://www.patenthub.cn/patent/CN107274695A.html>

Y. Jiang, H. Liao, P. Qing, and L. Yingqi, "Place vehicle management system, vehicle terminal and vehicle," China Patent CN105 828 459A, Aug. 03, 2016. [Online]. Available: <https://www.patenthub.cn/patent/CN105828459A.html>

Skills

Programming	Used in Working: C++, Objective-C, MATLAB, TeX . Used in Personal Code: Python, Java, R
Keynote	Proficient in making readable and clear slides using Apple Keynote or Microsoft PowerPoint. Experienced in delivering presentations.
Data Analyzing	Good at computer aided data analysis tools such as Excel, GNU R. Able to write programs to process and interpret data.
English	Fluent in spoken and written English, CET-6 652, TOEFL 107