GU, XIUYE

Room 201, Unit 3, Building 5, Siji Jiangnan Court ⋄ Jiashan, Zhejiang, 314100, P. R. China
+86-15700080187 ⋄ https://laoreja.github.io ⋄ xiuyegu@163.com

Education Background

Zhejiang University, Zhejiang, PRC
Bachelor of Engineering in Computer Science expected in June 2017 *Sept. 2013 – Present*

· GPA: 93/100 (3.97/4.0), the third year GPA: 94/100 (4.0/4.0); **Rank 1/189**.

University of California, Davis, CA, USA
Global Research Experience in Advanced Technologies Program *July 2016 – Sept. 2016*

· GPA: A (five letter grades).

Publications

· **Xiuye Gu***, Chaoqi Wang*, Cong Fu, Deng Cai. *A Revisit on Binary Code Learning for Large-scale Content Based Image Retrieval.* The 30^{th} IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2017 (* indicates the co-first authorship). Under review.

· Maheen Rashid, **Xiuye Gu**, Yong Jae Lee. *Interspecies Knowledge Transfer for Facial Keypoint Detection.* The 30^{th} IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2017. Under review.

Research Experience

Research Intern – University of California, Davis
Advisor: Prof. Yong Jae Lee

Interspecies Knowledge Transfer for Facial Keypoint Detection *July 2016 – Nov. 2016*

· Proposed a novel deep learning method for localizing animal facial landmarks via K nearest neighbor (kNN) search, thin plate spline warping network and fine-tuning; achieved significant improvement especially when training data are scarce.

· Developed the holistic system in Torch and Python; obtained reasonable baseline results.

· Built a dataset with 3900 horse facial images and keypoint annotations; developed an annotation tool.

Undergraduate Member – State Key Lab of CAD & CG, Zhejiang University
Advisor: Prof. Deng Cai

A Revisit on Binary Code Learning for Large-scale Content Based Image Retrieval (CBIR) *May 2016 – Present*

· Identified and empirically proved common insufficiencies in the experimental settings of state-of-the-art deep hashing methods.

· Proposed a revised experimental setting for better evaluating hashing methods for CBIR tasks and made the setting public as a new benchmark dataset.

· Conducted experiments under the revised setting to compare these deep hashing methods with traditional hashing and approximate nearest neighbor search algorithms.

· Verified and analyzed the inferiority of these deep hashing methods.

EFANNA : An Extremely Fast Approximate Nearest Neighbor Search Algorithm Based on kNN Graph *Feb. 2016 – June 2016*

· Contributed to the EFANNA open source C++ library and conducted comparison experiments.

· Adopted the *Lanczos* algorithm, the Boost and CLAPACK library to implement the *Anchor Graph Hashing* and *Fast kNN Graph Construction with Locality Sensitive Hashing* algorithms; achieved high computational efficiency.

· Implemented multi-threading via OpenMP API for the EFANNA library.

· Developed the binary code search algorithm for the EFANNA library.

License Plate Recognition System *Sept. 2015 – Feb. 2016*

- Proposed a robust iterative license plate segmentation algorithm.
- Designed and implemented a license plate segmentation system through combining my algorithm with traditional vision algorithms; achieved the error rate of 4% on low resolution images.
- Built a license detection system with robust skew and slant correction for better segmentation results.
- Wrote three literature reviews on license plate detection, segmentation and character recognition.

Selected Projects

Curriculum Design Projects, Zhejiang University
Team leader *June 2014 – June 2015*

- **Connect Them:** Built a novel news search engine in Python based on extensive research, which supported searching by key words & by article, and connected semantically relevant articles; displayed the connection by charts.
- **MiniSQL:** Designed and implemented a single-user database system in C++, comprising Buffer Manager, Record Manager, Index Manager, Catalog Manager, API, and Interpreter.
- **ZCC:** Developed a C compiler in Python, which featured compiler optimizations and error handling & recovery; made it generate X86 assembly (runnable on real computers; no need for virtual machines).

Student Research and Training Program (SRTP), Zhejiang University
Co-developer; Advisor: Prof. Xiaogang Jin *March 2015 – Nov 2016*

- Developed Influx, an Android application, which featured a self-defined subscription function, allowing users to select and add any list-like sections on web pages to their home-made news library.

Computer Hardware Interest Group, Zhejiang University
Member; Instructor: Prof. Qingsong Shi *March 2014 – Sept. 2015*

- **Mine Sweeper on FPGA board**: Utilized logical circuit design to develop a salute to the classic mine sweeper game in Verilog HDL, using VGA display.
- **Single-cycle and Multi-cycle CPU on FPGA board**: Designed and implemented a single-cycle and a multi-cycle CPU with 23 basic MIPS instructions through schematic design and Verilog HDL.
- **5-stage pipelined CPU on FPGA board**: Designed and implemented forwarding paths, branch 'predict-not-taken', and interrupts in my pipelined CPU with 18 MIPS instructions.

Selected Honors & Awards

- National Scholarship in China (**1.5%**) 2015, 2016
- First-Class Scholarship for Outstanding Students (**3%**) 2015, 2016
- First-Class Scholarship for Outstanding Merits (**3%**) 2015, 2016
- HE Zhijun Scholarship (Highest scholarship in the College of Computer Science & Technology, Zhejiang University.) 2016
- Excellent Student Awards 2014

Skills & Hobbies

- **Hacking Skills:** Caffe, Torch, OpenCV, Python, C/C++, Matlab, Shell Script, Javascript, LaTeX, HTML/CSS, SQL.
- **Test Scores:** TOEFL - 110, GRE - **Verbal 166**, Quantitative 168, Analytical Writing 4.0.
- **Hobbies:** Mathematics, Literature, Traveling, Ping Pong, Painting, Piano.

Extra-Curricular

- **Debate Team of School of Medicine:** Participated in the Newborn Cup Debate Competition and the Qizhen Cup Debate Competition.
- **Investigation on the National Intangible Cultural Inheritance–Northeast Errenzhuan:** Conducted field study of Errenzhuan and proposed new ways for its inheritance and promotion.
- **Member of Student Association of Science and Technology:** Managed the online GEEK station, GEEK*ZJU.