Peng Qi

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Education & Professional Experiences

2012.7 to present **Research Assistant**, State Key Lab of Intelligent Technology & Systems (SKLIST), Tsinghua University (THU)

- Hu, X.L., **Qi, P** and Zhang, B. Hierarchical K-Means Algorithm for Modeling Visual Area V2 Neurons, ICONIP 2012.

2008.9 $\sim$ 2012.7 **Bachelor of Engineering, Outstanding Graduate**, School of Software (SS), THU

- Ranked 8 / 58, GPA 88.56 / 100 (Ranked 3/58, GPA 91.16 / 100 in third year)
- 2011, National Scholarship (awarded for overall excellence)
- 2010, Citibank Scholarship (awarded for overall excellence)
- 2009, Ge-Ru Zheng Scholarship (awarded for study excellence)
- 2008, Freshman Scholarship (ranked 3rd of Guizhou Prov. in the NCEE*)
- 2008, First Prize in NOIP** (exempted of NCEE and admitted to Tsinghua University)
- 2007, First Prize in NOIP

* Natational College Entrance Exam ** National Olympiad in Informatics (Provincial)

Research

2011.8 to present **Higher-order Statistics of Natural Sound with Deep Networks**, SKLIST, Dept. of Computer Sci.&Tech.

- Proposed the problem after extensive publication reading
- Reproduced classical deep learning blocks such as Sparse Restricted Boltzmann Machine (RBM) and Lateral RBM with MATLAB, and conducted extensive experiments on image and audio data

2012.2 $\sim$ 2012.7 **Junction Extraction by Referencing Similar Models (Undergraduate Thesis)**, Lab of CG&CAD, SS

- Proposed extraction method based on shape correspondence to avoid the misjudgement of bent rigid part without reference
- Designed the shape descriptor and comparison function for junction extraction
- Achieved effective, robust extraction result as expected

2011.3 $\sim$ 2011.8 **Short Text Classification based on Universal Knowledge Base (UKB)**, Inst. of Info. Sys.&Eng., SS

- Proposed a topic relevance measurement based on information theory
- Combined Latent Dirichlet Allocation (LDA) topic models with topic relevance to extract related knowledge from Wikipedia (as the UKB), improved classification accuracy as well as UKB utility
- Research paper submitted to Web Search and Data Mining (WSDM) 2011

Projects and Competition Experiences (Highlights)

2011.3 $\sim$ 2011.6 **"Quanr" Microblog(Team)**, Team Leader, **Bronze Prize** of the 4th Software Design Contest of THU (TSDC)

- Completed the structure of the website as well as the dynamic front-end pages with Struts 2
- Encapsulated an OAuth API and a serch-engine-friendly interface with Struts 2 and plugins
- Coordinated Members, supervised development, handled problems, and delivered presentations

2011.5 $\sim$ 2011.6 **TexTriBute: A Distributed Framework for Text Retrieval (Team)**, Core Member, **Ranked 1st** among course projects of *Advanced Data Structures*

- Proposed the idea of parallelly handling search queries on distributed servers
- Completed a retrieval system based on Latent Semantic Indexing (LSI)
- Proposed an algorithm for generating searching snippets based on LSI

2010.7 $\sim$ 2010.8 **IMBA (Team)**, Team Leader, **Award of Merit**, Ranked 2nd in the Sposor Division of the 3rd TDSC

- Independently implemented an image segmentation algorithm based on color space transform and thresholded search
- Completed a system for detecting vehicles in parking lots

2008.10$\sim$2008.12 **Black-Shadow (Team)**, Team Leader, **Bronze Prize**, Ranked 5th in the 10th Collaborative AI Programming Contest

- Implemented an agent with search, dynamic programming, greedy, and inference algorithms

2008 $\sim$ 2012 **Other Project Experiences** (Selected from real-world projects and course projects)

- Generating Tree-Shaped Self-Organizing Feature Map (Implemented the algorithm)
- Tiandi 360 Employee Survey System
- Internal Affairs Website for Network Support Center, THU
- Semantic Query Optimization in HSQLDB the Open Source Database
- Semantic-directed LR Grammar Analyzer Generator
- Generation, Optimization, and Visualization of a Regex Engine
- Design and Implementation of a CPU with a simple instruction set with VHDL
- Economic Road Construction Planning based on Terrain Information
- Multiple Implementations and Parameter Analysis of Phongą́s Lighting Model

Social Services

2009 $\sim$ 2011 **Students' Union**, School of Software

- 2011, Vice President: Supervised artistic activities and document archiving
- 2010, Office Director: Expedited work efficiency by standardizing procedures; Account management
- 2009, Vice Director of Dept. Development: Activity planning and document archiving

2008 $\sim$ 2009 **Students' Association of Science and Technology**, School of Software

- 2009, Vice Director, Dept. Tech.: Handled 3 campus-scale lectures
- 2008, Member of Dept. Contest Affairs: Participated in the preparation of the 2nd TSDC

2010 **Investigation on the Trad. Dramas of Tian-Long, Guizhou Prov.**, Bronze Prize of Winter Practice Reports

- Investigated the development and inheritance of the local traditional Nuo Drama, and proposed suggestions to the local tourism in the report

2008 $\sim$ 2011 **Other Volunteer Experiences**

- 2011, volunteerred for the 100th anniversary of Tsinghua University
- 2009, Sunshine Road Education Rescue Program, taught at an elem. school in Dafang, Guizhou
- 2008$\sim$2010, Taught algorithm classes in NOIP summer camp, Anshun, Guizhou
- 2008$\sim$2009, Organized excellent university students for symposia with highschool students, Anshun, Guizhou
- 20008, Taught computer at Beijing Shu-Ren Elem. School for Migrant Workers' Children

Skills & Self-Evaluation

English Ability

- GRE General (V / Q / AW): 580 (79%) / 800 (94%) / 5.0 (87%)
- TOEFL iBT (Total / Reading / Listening / Speaking / Writing): 115 / 30 / 29 / 26 / 30

Computer Capability

- Master programming / script / query languages such as C / C++, Java, JavaScript, MATLAB, Python, ASM, SQL, HTML / CSS, and is capable of learning new ones fast
- Possess deep understandings to Computer Architecture, Operating System, Compilers, and common data structures and algorithms
- Capable of working on Windows GUI / Linux bash remote servers

Self-Evaluation

- Possess strong learning ability, good at and eager to accepting novel things
- Love scientific research, fond of exploring the unknown and solving real problems
- Rich in engineering experiences, and strong in programming and problem-solving