Zheng Rui

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EDUCATION

Hong Kong University of Science and Technology, Hong Kong   2013 - 2016
    Thesis: Context-aware visual privacy control
    M.Phil. in Computer Science and Engineering

Institute of Physics, Chinese Academy of Sciences, Beijing   2006 - 2012
    Thesis: Monte Carlo methods and applications on magnetic models
    Ph.D. in Computational Physics

Huazhong University of Science and Technology, Wuhan   2002 - 2006
    Thesis: Colossal magnetoresistance in Perovskite Oxide
    B.S. in Applied Physics

WORK EXPERIENCE

Hong Kong University of Science and Technology   Aug 2013 - Present
Research / Teaching Assistant   *Hong Kong*

- ❖ Lead development in multiple research projects, including *OCR on Google Glass*, *Mean First Passage Time and Cover Time of random walks on different graphs*, *Context-aware visual privacy control*. Deploy state-of-the-art deep learning models on mobile for tasks including scene classification, face recognition, gesture recognition.

- ❖ Develop multiple tools and libraries, including group discussion website, image annotation tool, mobile streaming multiplexing / demultiplexing tool, face alignment library on Android, Caffe mobile library on Android.

- ❖ Administration of lab servers. Provide consultancies for other projects on problems related to machine / deep learning, computer vision and Linux.

- ❖ TA of Courses *Operating System*, *Python Bridging Course*, *Social Network Analysis*.

Beijing Zhong Ruan Co.   Apr 2013 - Aug 2013
Back End Developer   *Beijing*

- ❖ Develop a web based monitoring system for nuclear power plants in Shandong province.

- ❖ Set up development environment for the team and lead back end development.

ENIN Tech. Inc.   Aug 2012 - Oct 2012
R&D Engineer   *Beijing*

- ❖ Design data reconciliation and flow optimization algorithms.

Institute of Physics, CAS   Sep 2006 - Jun 2012
Research Assistant   *Beijing*

- ❖ Design and implement algorithms for the study of phase transitions in both classical and quantum magnetic models. Focused on Monte Carlo methods and density matrix renormalization group based methods.

- ❖ First principle calculations of band structure and magnetic properties of half-metal materials.

Projects

Sample Projects

- ❖ *Cardea* - A context aware privacy control system which can enhance users' visual privacy based on their context specific privacy settings. Context includes location, surrounding scene and people. Users can also temporarily overwrite their settings using gestures. Code.

- ❖ *Caffe Mobile Lib* - An extension from Caffe-android-lib, now supports running multiple deep neural networks in Android and batch feature extraction. Code.

- ❖ *Android Face Alignment Lib* - A JNI library which enables android phones to not only detect faces, but also detect facial landmarks and thus do face alignment. Code.

- ❖ *Annota* - Two versions: one is a Flask Web App and another is a PyQt App. Both enable users to annotate images. The annotated images can be used to train detection models. Flask App Code, Qt App Code.

- ❖ *Grp-Meeting* - A Flask App which supports publishing contents and posting comments with Markdown syntax. Math symbols are well rendered both in contents and comments thus it is helpful for inner research group discussion. Code.

- ❖ *Arabic Audio Book* - An audio pdf for learning Arabic. Pronunciation, pictures, and short sentences are used together to help understanding and memorizing each word. Download.

Course Projects

- ❖ *Single View Metrology* - Stereo from single image based on prior knowledge about few scene coordinates. Blog Post.

- ❖ *Dense Light Stereo* - Stereo from massive images densely sampled with different light sources. Blog Post.

- ❖ *Image Scissor* - Implement lasso function which most image editing tools have. Blog Post.

Computer Skills

OS	Ubuntu, OSX, CentOS, Android
Languages	C++, Python, Bash, Javascript, Java, Matlab, Lua, Fortran, SQL
Tools	TEX, Vim, WingIDE, Android Studio, Xcode, Inkscape, Omnigraffle
Libs	OpenCV, Caffe, Torch7, TensorFlow
Frameworks	Flask, Node

Publications

- ❖ Jiayu Shu, Sokol Kosta, Rui Zheng and Pan Hui, *Talk2Me: A Framework for Device-to-Device Augmented Reality Social Network*, submitted to INFOCOM 2017.

- ❖ Jiayu Shu, Rui Zheng and Pan Hui, *Context-Aware Visual Privacy Control*, accepted in MobiSys16 WKSHPS.

- ❖ Jiayu Shu, Rui Zheng and Pan Hui, *Interactive Visual Privacy Control with Gestures*, accepted in MobiSys16 Demo. Code.

- ❖ Tongfeng Weng, Jie Zhang, Moein Khajehnejad, Michael Small, Rui zheng, and Pan Hui, *Navigation by anomalous random walks on complex networks*, accepted in Nature Scientific Reports. Code.

- ❖ Zheng Rui and Liu Bang-Gui, *Stable two-dimensional ferromagnets made of regular single-layered lattices of single-molecule nanomagnets with perpendicular anisotropy*, J. Appl. Phys. 106, 054316 (2009). PDF.

- ❖ Zheng Rui and Liu Bang-Gui, *Quantum Monte Carlo study of the phase transition for a generalized Two-Dimensional Staggered Dimerized Heisenberg Model*, Chin. Phys. B. 21, 116401 (2012). PDF.

Miscellaneous

- ❖ Language levels: native *Chinese*, full professional proficient *English*.

- ❖ Course records: *Machine Learning* A, *Computer Vision* A+, *Bayesian Network* A-, *Algorithm Design and Analysis* A.

- ❖ Hobbies: excellent at *table tennis* and *basketball*, good at *billiards*.