Yazhong Wang

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Education

M.S. in Computer Science from **Rutgers University**, New Brunswick (**3.6/4**) 2015 - Dec. 2017

- Awards: Invited Talk and Best Poster in 2015 NSF Data Science Workshop, Seattle, USA

Ph.D. in Physics from **Rutgers University**, New Brunswick (**3.95/4**) 2012 - Dec. 2017

- Publications: Nature Materials, Advanced Materials, Quantum Materials, Phys. Rev. Lett., Phys. Rev. B, Sci. Rep.,

B.S. in Physics from **University of Science and Technology of China,**Hefei (**3.8/4**) 2008 - Jun. 2012

- Awards: National Scholarship (97^{th} percentile), Outstanding student Grade 1, 2, 3 ($95^{th}, 90^{th}, 80^{th}$ percentile)

Programming Projects

Intelligent deception detection system based on multimodal deep learning (Python, Deep Learning, NLP) Dec. 2016

- Proposed and implemented a multimodal deep learning system to identify deception by using feature representations learned from multimodal sets (video and audio) through Restricted Boltzman Machine (RBM).
- By using this multimodal method, the accuracy of deception detection on verbal only court record can be improved by 300% , compared to the traditional unimodal method.

Genius's Escape (A real time strategy game using Unity3D, C#) Oct. 2016

- Implemented an interactive narrative with a fully animated user-controllable player using parametric behavior tree. Created several novel affordances using inverse kinematics and a controllable isometric camera.

Classification of drug-drug interactions with topic modeling in biomedical text (Java, Semi-supervised learning, Machine Learning) May. 2016

- Implemented the semi-supervised DDI-LDA model based on Bayesian model complemented with knowledge-driven distant supervision, instead of the traditional supervised SVM model, to identify the DDIs in biomedical text
- Applied one filtering process, which utilizes the machine-learning approach of Hidden Markov models (HMMs), making our DDI-LDA approach more robust to unbalanced data (Accuracy of HMMs is 96.44% over 6,976 datasets)

Camera calibration and augmented reality (MATLAB, Computer Vision, AR) Apr. 2016

- Calibrated the camera of a robot vehicle using SVD and Linear Least Squares methods
- Implemented camera calibration from multiple images of 2D planes and augmented these photos with virtual objects (e.g., mapping clip art images and 3D objects onto the photos.)

Computational photography: texture synthesis and image inpainting (MATLAB) Mar. 2016

- Created a MATLAB program to synthesize a large scale image from sample textures
- Implemented object removal and region filling, which can be widely used for image reconstruction and retouching

Text spreadsheet (2D) using linked list (C++) Nov. 2014

- Implemented polymorphic cells to store numbers, strings or functions using list of list of cells
- Derived the function cell (mean, min, max) value from other cells and updated it when the spreadsheet was modified

Technical Skills

Programming Languages: C, C++, MATLAB, C#, Java, Python
Web Technologies: HTML, CSS, JavaScript, bootstrap, FrontPage,
Others: Unity 3D, Git, Origin Lab, Version, Labview, Latex, Visual Studio

Experience

Research Assistant, Rutgers Center for Emergent Materials, USA (Labview, Image Processing, MATLAB) Sept. 2013 - Present

- Developed Labview programs with user interface to implement fancy functions (Control Multi-machines, etc.)
- Created MATLAB tool box functions to do image analysis (Image Segmentation, Corner Detection, etc.)
- Designed and build web using HTML, CSS and Javascript (Ensured cross-devices interoperability)

Research Assistant, Hefei National Lab. for Phys. Science at Microscale, China Oct. 2011 - Jul. 2012

- Implemented Monter Carlo simulation using C++ to solve problem. (e.g. Klotski, Evolution of the lightning)