Yazhong Wang

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Education

Master 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
- Courses include: Computer Vision, Machine Learning, Introduction to Artificial Intelligence, Linear Algebra and its Applications, Numerical Analysis, Computational Geometry, Database Systems, Programming Finance, Design and Analysis of Data Structures and Algorithms, Computer Graphics, Pattern Recognition

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.,

Bachelor in Physics from **University of Science and Technology of China** (**3.8/4**) Jul. 2012

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

Research Experience

Research Assistant, Rutgers Center for Emergent Materials, USA Sept. 2013 - Present

- Unveiled new multiferroics through transport measurement and simulations of the magnetoelectric coupling

Research Assistant, Hefei National Lab. for Phys. Science at Microscale, China Oct. 2010 - Jul. 2012

- Implemented the simulation of the interaction between 2DEGS in heterojunctions and surface local plasmon

Summer Intern, Electron Spectroscopy Laboratory, Korea Jul. - Sept. 2011

- Set up a high resolution Magneto-Optical Kerr System used to characterize the magnetic property on hard disk, etc.

Programming Projects

Intelligent deception detection system based on multimodal deep learning 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 in Unity3D) 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 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 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 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 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, FrontPage, Unity 3D, Git
Scientific Software: Origin Lab, Version, Labview, Latex, Visual Studio, VMware, Photoshop