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Fu-Chang Sun

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Education

Doctor of Philosophy in Physics — May 2017
University of Connecticut (UCONN), Storrs, CT

Master of Science in Physics — January 2010
University at Buffalo (UB), Amherst, NY

Bachelor of Science in Math and Physics (Double Major) — June 2006
National Cheng Kung University (NCKU), Tainan, Taiwan

Technical Skills

- Shell Scripting, Python, pandas, C/C++, Git/GitHub, Hadoop, MapReduce, tensorflow, SQL, Unix, LaTeX

Project Experience

Machine Learning Nanodegree Program at Udacity — in progress

- Apply statistical analysis tools to predict housing prices and evaluate the predictive model
- Utilize supervised learning models such as Decision Trees, SVMs, Neural Networks to target potential financial contributor using relational database
- Identify patterns and structures in unlabeled data of wholesale distributor's service using unsupervised learning technique and unveil its clustering for new prediction
- Implement reinforcement learning algorithm (Q-learning) for optimal decision and convolutional neural networks for image classification

Materials Hackathon (MatHack) at MRS Fall Meeting & Exhibit — December 2015

- Received the *Third Place of Materials Hackathon* by automatically collecting materials crystallographic data from multiple databases
- Awarded as *Special Prize for Materials Data Challenge* by sustainable and extensible research project embedding in the commercialized server

Work Experience

Research Assistant — September 2013 – January 2017
Department of Materials Science & Engineering, UCONN

- Conducted and published scientific research on ferroelectric materials using computational modeling in quantum, classical, and continuum time and length scale
- Designed the model and analyzed the simulation results of ferroelectric devices with different stacking geometry to explain experiment observation

Lab Instructor, Teaching Assistant — September 2010 – May 2013
Department of Physics, UCONN

- Motivated student engagement by creating in-class activities and prompting discussions
- Encouraged students to develop critical thinking skills with various experiment setup

Educational Volunteer — June 2013 – August 2013
Department of Physics, UCONN

- Redesigned lab activities and instructions to improve students' conceptual understanding
- Participated and provided feedback about new content in the weekly revision meetings