# JUN ZHUANG
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## EDUCATION

**Doctorate of Philosophy in Computer Science**, School of Science                                    08/2018-Present
Indiana University-Purdue University at Indianapolis (IUPUI), Indianapolis, IN
Courses: Data Mining, Numerical Optimization, Computer Architecture, Intelligent System, etc.
**Master of Science in Computer Science**, School of Engineering and Applied Sciences                09/2016-06/2018
University at Buffalo (UB), Buffalo, NY
Courses: Algorithm, Deep Learning, Computer Vision, Machine Learning, Operating Systems, Distributed Systems, etc.
**Master of Science in Finance**, Saunders College of Business                                        09/2012-08/2013
Rochester Institute of Technology (RIT), Rochester, NY
Awards: Merit Scholarship (Covered 50% tuition fee);
**Bachelor of Engineering in Safety Engineering**, School of Mechanical and Automotive Engineering    09/2007-07/2011
South China University of Technology (SCUT), Guangzhou, China
Awards: Honor Scholarship (top 10%), Excellent League Member Honor (top 5%), Merit Student Honor

## PROFESSIONAL SKILLS

**Programming Languages:** Python (5 yrs+), MATLAB (3 yrs+), Java, C/C++, CUDA, HTML+CSS+JavaScript;
**Deep Learning Frameworks:** TensorFlow with Keras, PyTorch, DGL;
**OS and Platforms:** MacOS, Linux, Android, AWS EC2, MySQL, GitHub.

## PROFESSIONAL EXPERIENCE

**Research Intern,** The University of Tennessee, Knoxville – TN                                       Summer 2020
- Collaborated with Dr. Dali Wang to develop efficient deep learning algorithm for synthesizing 3D live microscopic images.

**Mentor,** Data Science Research Experience for Undergraduates (DSREU) – IN                          Summer 2019
- Assisted in DSREU bootcamp; Provided instruction to undergraduate students on academic research project.

**Foreign Exchange Trading Specialist,** China Merchants Bank Co., Ltd. – China                       01/2014-07/2016
- Executed trading order; Performed fixed income research and processed large scale data; Employed statistical model to predict the trend of foreign exchange rate; Developed a program to classify transaction data and optimized the running time.

## SELECTED RESEARCH PROJECTS

**Gaussian Mixture Generative Adversarial Networks for Non-Exhaustive Learning (Reviewed by SDM21') / Tech: TensorFlow**
- Proposed a bidirectional generative adversarial model with Gaussian mixture prior for online detecting new emerging classes and significantly outperforms the baselines on several network intrusion datasets.

**Defense of Graph Neural Networks (GNN) on Large Sparse Graph (Reviewed by WWW21') / Tech: PyTorch with DGL**
- Attended KDD Cup 2020 Competition; Proposed a novel defense model by Bayesian inference against fake-node non-targeted attack on large sparse graph and improved the robustness of GNN on seven public graph datasets.

**Bidirectional Adversarial Learning for Biomedical Image Synthesis (Reviewed by ISBI21') / Tech: TensorFlow**
- Proposed a novel bidirectional architecture integrating with Auto-Encoder and Generative Adversarial Networks to synthesize geometric-matched multi-source microscopic images.

**Into the Reverie: Exploration of the Dream Market (IEEE BigData 2019) / Tech: Python with pandas, MySQL**
- Conducted a comprehensive analysis on famous dark-net crypto-market, Dream Market; Explored the potential for de-anonymization of vendors; Evaluated the efficacy of hierarchical agglomerative clustering for grouping together transactions corresponding to the same buyer.

**Lighter U-Net for Segmenting WMH in MR Images (MobiQuitous 2019) / Tech: TensorFlow**
- Proposed a light architecture, Lighter U-Net, to segment brain MR images for identifying WMH and to achieve comparable performance as the state-of-the-art methods by only using 17% parameters of standard U-Net.

## SELECTED COURSE PROJECTS

**In-class Kaggle Competition: Audio Classification and Anomaly Detection / Tech: TensorFlow**
- Employed BiLSTM to classify audio spectrogram; Applied BiGAN to detect anomaly audio digit; Won the 3rd-place in board.

**Equity Price Prediction and Trading Decision Making / Tech: TensorFlow**
- Employed LSTM to predict U.S. stock price; Investigated the robustness of different optimizers; Proposed two novel evaluation approaches, price momentum and relative modified sharpe ratio, for trading decision making.

**Markov Chain Monte Carlo (MCMC) Bayesian Election Forecasting / Tech: Python**
- Implemented Metropolis-Hastings algorithm to predict senate race and compared it with Langevin Monte Carlo method.

**PintOS 1-Threads & 2-User Programs / Tech: C**
- 1. Extended the functional thread system; 2. Performed "kernel" level programming of user programs.

**Replicated Key-Value Storage / Tech: Android programming in Java, socket programming**
- Built a simplified version of Amazon Dynamo by implementing partitioning, replication and failure handling.

## ADDITIONAL INFORMATION

**Technique Committee Member**, 1st International Workshop on EFIOT (In conj. with MobiQuitous 2019), Houston, Nov. 2019
**Teaching Assistant**, CS580 Algorithm (Sp19, Fa20), CS573 Data Mining (Fa19), CS549 Intelligent Systems (Fa20), IUPUI
**Book:** S. Ge, *J. Zhuang* et al. Flowers and Moonlight. Jinan University Press, 2015.
**Languages:** Cantonese (native), Mandarin (native) and English (fluent)