# JUN ZHUANG

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## EDUCATION

**Ph.D. in Computer Science**, School of Science 08/2018-Expected 05/2023
**M.S. in Computer & Information Science**, School of Science 08/2018-05/2021
Indiana University-Purdue University Indianapolis (IUPUI), Indianapolis, IN
Courses: Data Mining, Numerical Optimization, Data Science, Computer Architecture, Intelligent System, etc.
**M.S. 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.
**M.S. in Finance**, Saunders College of Business 09/2012-08/2013
Rochester Institute of Technology (RIT), Rochester, NY
**B.E. in Safety Engineering**, School of Mechanical and Automotive Engineering 09/2007-07/2011
South China University of Technology (SCUT), Guangzhou, China

## PROFESSIONAL SKILLS

**Programming Languages:** Python (6 yrs+), R (1 yr), C/C++ (2 yrs), Java (1 yr), MATLAB, CUDA, HTML+CSS+JavaScript;
**Tools:** TensorFlow with Keras, PyTorch, Linux, AWS EC2, MySQL, PrestoDB, Git.
**Statistics:** linear & logistic regression, Bayesian inference, K-means & EM, SVM, RF, XGB, MCMC, HMM, PCA, etc.

## PROFESSIONAL EXPERIENCE

**Ph.D. Software Engineer Intern,** Uber Technologies, Inc. – CA Summer 2022
- Queried data using PrestoDB; Improved the OT-level ETA model by ensemble regression approaches in the coordinated structure pricing framework for trip pricing; Proposed a new metric to measure the market equilibrium; Wrote unit tests to cover the model.

**Algorithms and Advanced Analytics Intern,** Roche Diabetes Care, Inc. – IN Summer 2021
- Explored reinforcement learning techniques, e.g., DQN and Actor-Critic, to control the glycemic risk; Employed auto-encoding recurrent networks to predict the insulin intake of T1D and investigated how to handle the prediction uncertainty in time-series data.

**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.

**Foreign Exchange Trading Specialist,** China Merchants Bank Co., Ltd. – China 01/2014-07/2016
- Employed statistical models for FX rate prediction; Developed a program to classify large-scale transaction data and detect unqualified data.

## SELECTED PUBLICATIONS

**Robust Node Classification on Graphs: Jointly from Bayesian Label Transition and Topology-based Label Propagation** (CIKM'22) [code]
- Proposed a new label inference model, LInDT, that integrates both Bayesian label transition and topology-based label propagation with asymmetric Dirichlet prior, against three scenarios of topological perturbations on graphs.

**Defending Graph Convolutional Networks against Dynamic Graph Perturbations via Bayesian Self-supervision** (AAAI'22) [code]
- Proposed a new Bayesian self-supervision model, GraphSS, to improve the robustness of the node classifier against adversarial perturbations on label-scarce dynamic graphs.

**Deperturbation of Online Social Networks via Bayesian Label Transition** (SDM'22) [code]
- Proposed a novel Bayesian label transition model, GraphLT, to improve the robustness of the node classifier in online social networks by transiting the categorical distribution of graph convolutional networks based on dynamic conditional label transition.

**Non-Exhaustive Learning Using Gaussian Mixture Generative Adversarial Networks** (ECML-PKDD'21) [code]
- Proposed a bidirectional generative adversarial model with Gaussian mixture prior for online detecting new emerging classes and significantly outperformed the baselines on several network intrusion datasets.

**Geometrically Matched Multi-source Microscopic Image Synthesis Using Bidirectional Adversarial Network** (MICAD'21) [code]
- Proposed a novel bidirectional architecture integrating with Auto-Encoder and Generative Adversarial Networks to synthesize geometric-matched multi-source microscopic images.

**Lighter U-Net for Segmenting White Matter Hyperintensities in MR Images** (MobiQuitous'19)
- 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 vanilla U-Net.

## SELECTED COMPETITIONS

**Graph Injection Adversarial Attack & Defense (SIGKDD 2020) / Tech: PyTorch with DGL**
- Designed attackers (injecting nodes only) to weaken the node classifier; Proposed a defender to defend the attacks from other teams.

**Stress Level Prediction on COVID-19 Survey Data (Kaggle)** [code] **/ Tech: TensorFlow with Keras**
- Investigated classic machine learning models, e.g., xgb, lgb, svm, rf, and proposed a new ensemble method to predict the stress level.

**Audio Classification on Spoken Digits (Kaggle)** [code] **/ Tech: TensorFlow with Keras**
- Employed BiLSTM to classify audio spectrograms; Applied BiGAN to detect the anomaly audio digit on test set.

## ADDITIONAL INFORMATION

**TC/PC Members**, AAAI'22, CIKM'22, SIGKDD'21, VCIP'21, MICAD'21, MobiQuitous'19, ISM'17, etc.
**Teaching Assistant**, CS580 Algorithm (Sp19, Fa20, Sp21), CS573 Data Mining (Fa19), CS549 Intelligent Systems (Fa20), IUPUI.
**Certificates:** Recommender Systems, Self-Driving Cars, Data Visualization (Coursera).
**Languages:** Cantonese (native), Mandarin (native) and English (fluent).