Yihong "Jonathan" Ma

CONTACT INFORMATION

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EDUCATION

Shanghai University of Finance and Economics — **Shanghai, China**
Bachelor of Economics in Finance (GPA: 3.55/4) — *Sept. 2016 - Present*

- Relevant Courses: Computer Organization (in progress), Computer Programming, The Principle of Data Base, Financial Data Analysis, Mathematical Analysis, Mathematical Statistics, Probability Theory, Linear Algebra

University of Notre Dame — **Notre Dame, IN**
Visiting Undergraduate (GPA: 4/4) — *Aug. 2018 - May 2019*

- Relevant Courses: Design/Analysis of Algorithms, Data Structures, Stochastic Processes, Differential Equations, Data Science, Data Analysis with Python, Statistical Methods in Data Analysis
- Advisor: Prof. Meng Jiang, Prof. Chaoli Wang and Prof. Daniele Schiavazzi

PUBLICATIONS

[C2] Jun Han, Yunhao Xing, **Yihong Ma**, Hao Zheng, Chaoli Wang. "V2V: Variable-to-Variable Translation for Multivariate Time-Varying Data with Sparsely Aggregated Convolutional Neural Nets." **under review** at *IEEE Pacific Visualization Symposium (**PacificVis**)*, 2020.

[C1] Daheng Wang, Zhihan Zhang, **Yihong Ma**, Tong Zhao, Tianwen Jiang, Nitesh Chawla, Meng Jiang. "Evolutionary Graph Neural Networks." **under review** at *AAAI Conference on Artificial Intelligence (**AAAI**)*, 2020.

[W1] **Yihong Ma**, Qingkai Zeng, Tianwen Jiang, Liang Cai, Meng Jiang. "A Study of Person Entity Extraction and Profiling from Classical Chinese Historiography." *International Workshop on EntitY REtrieval (**EYRE**)* at *ACM International Conference on Information and Knowledge Management (CIKM)*, 2019.

RESEARCH EXPERIENCE

Person Entity Extraction and Profile Construction in Classical Chinese Historiography — *May 2019 - Aug. 2019*
Advisor: Prof. Meng Jiang — *DM2 Lab, University of Notre Dame*

- Developed a Bootstrapping algorithm based on textual patterns to extract persons and their biographical information from a set of classical Chinese histography, and reached an F1 of 0.851 on ground-truth person profiles annotated by domain experts
- Pre-trained the Character Embedding via Word2vec on the corpus of Orthodox Histories
- Adapted the Bi-LSTM CRF in PyTorch for the task of Named Entity Recognition (NER) in the domain of classical Chinese

Node Embedding Learning in Academic Publication Graph via Evolutionary Graph Neural Networks — *May 2019 - Aug. 2019*
Advisor: Prof. Meng Jiang — *DM2 Lab, University of Notre Dame*

- Worked with Microsoft Academic Graph data (∼100G)
- Mined information from a publication graph, where each node represents an author and each edge indicates the co-authorship in one paper between two authors

- Web scraped the citations-per-year data of a total of 1,928 author nodes in the publication graph from Google Scholar

Variable-to-Variable Translation for Multivariate Time-Varying Data Using Deep Learning *Apr. 2019 - Present*
Advisor: Prof. Chaoli Wang *University of Notre Dame*

- Adapted the Pixel-to-Pixel (2D) CycleGAN in PyTorch for Voxel-to-Voxel (3D) translation as one of the baseline models using Pytorch
- Conducted exhaustive experiments to compare the performance of the proposed model and 3 baseline models on 4 scientific simulation data set (i.e., combustion, ionization, climate and combustion maps)
- Rendered and analyzed the generated scientific simulation data via ParaView, an open-source data analysis and visualization application

Multi-resolution Approximation and Wavelets in the Analysis of Financial Data *Aug. 2018 - May 2019*
Advisor: Prof. Daniele Schiavazz *University of Notre Dame*

- Reproduced the Fast Wavelet Transform (FWT) algorithm by Mallat to compute the wavelet transform coefficients of S&P Index data for period 2002-2014
- Leveraged the Steins Unbiased Risk Estimate (SURE) algorithm to threshold the wavelets coefficients for denoising
- Predicted the tendencies (whether going up or down in the next time stamp) of S&P Index using the combination of Wavelet Transforms and Deep Neural Network, achieving an accuracy of 60.71% in backtesting

PROFESSIONAL EXPERIENCE

Ping An Insurance (Group) Company of China, Ltd. **Shanghai, China**
Assistant Algorithm Engineer, Life Insurance AI R&D Group *Incoming Sept. 2019*

SKILLS

Programming Languages: Python, C++, R, MATLAB and LaTeX
Frameworks: PyTorch, Keras, Sklearn, Numpy, Pandas, Gensim and etc.