

Yingjun Dong

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Education

Binghamton University, State University of New York

Doctor of Philosophy, System Science

January 2017 – December 2021 Expected

Cumulative GPA: 3.90/4.00

Binghamton University, State University of New York

Master of Arts, Economics

August 2015 – December 2016

Cumulative GPA: 3.22/4.00

Shandong Normal University

Bachelor of Economics, International Economics and Trades

September 2011 – June 2015

Cumulative GPA: 3.00/4.00

School Second-Class Scholarship

July 2013

School Third-Class Scholarship

July 2014

Skills

Languages: Python, LaTeX, Shell Script, MATLAB, R

Tools: Doc2Vec, OpenCV, Scikit-Learn, TensorFlow, PyTorch, FFmpeg, Vim, MongoDB

Knowledge: Feature Selection, Data Mining, Machine Learning, Speech Processing, Natural Language Processing

Professional Experience

Graduate Research Assistant at Binghamton University – SUNY

August 2019 – Present

- ◆ Graduate research assistant for Center for Collective Dynamics of Complex Systems (CoCo) Organized Research Center (ORC)
 - Assisted to host CoCo seminars.
 - Communicated with CoCo invited speakers.
 - Organized CoCo Student-Faculty Mixer event independently.
 - Worked as editorial staff of Northeast Journal of Complex System (NEJCS).

Research Assistant at Binghamton University – SUNY

August 2018 – Present

- ◆ Project: Diversity, network structure, and the effectiveness of collective design and innovation (Award #: NSF SES-1734146)
 - Collected narrative data from MongoDB.
 - Applied Doc2Vec to do narrative data analysis, and analyzed relationships between participants using the generated vectors from Doc2Vec.
- ◆ Project: Collective planning and leadership for the U.S. Army
 - Conducted speaker diarization on audio using machine learning.
 - Assisted to leadership study with participants' communicating behaviors.

Teaching Assistant at Binghamton University – SUNY

August 2017 – May 2018

- ◆ Teaching assistant for SSIE 505 Probability and Statistics
 - Graded home assignments and exams.
 - Tutored students in Probability and Statistics.
- ◆ Teaching assistant for SSIE 520 Simulation and Modeling
 - Graded home assignments and exams.
 - Tutored students in Simulation and Modeling.

Featured Projects

Feature Selection on Facial Landmarks

August 2018 – April 2019

- ◆ Used OpenCV to process images.
- ◆ Applied hybrid feature selection method with combining information theory, hierarchical clustering and genetic algorithm on facial landmarks to removing redundant features and improving computational efficiency.
- ◆ Conducted SVM classifier on selected features, and compared the classification accuracy rate.
- ◆ Applied PyTorch and OpenCV to label selected facial landmarks on images, efficient of labeling was improved using landmarks after feature selection.
- ◆ Tools: Python, Scikit-Learn, PyTorch, OpenCV.

Speaker Diarization on Real World Audio Dataset

August 2019 – Present

- ◆ Used FFmpeg to preprocess audio dataset.
- ◆ Applied Gaussian Mixture Model to cluster the utterance.
- ◆ Preliminary study: utterance clustering performance was improved using processed signals.
- ◆ Tools: Python, Scikit-Learn, FFmpeg, Shell Script.

Field of View Prediction on 360 Degree Video

August 2020 – Present

- ◆ Built Long Short Term Memory (LSTM) model to predict users' field of view on 360 degree video.
- ◆ Tools: Python, Tensorflow.

Publications & Presentation

[Presentation] **Yingjun Dong** and Hiroki Sayama, Optimizing Facial Feature Extraction for Emotion Detection on Mobile Devices. *NERCCS2019: Second Northeast Regional Conference on Complex Systems*, April 3-5, 2019, Binghamton, NY.

[Presentation] Yiding Cao, **Yingjun Dong**, Minjun Kim, Neil MacLaren, Ankita Kulkarni, Shelley Dionne, Francis Yammarino, and Hiroki Sayama, Examining the effects of expertise diversity on collective design and innovation using an online social network experiment and "idea geography" visualization: An initial report, presented as a talk at *NERCCS 2019: Second Northeast Regional Conference on Complex Systems*, April 3-5, 2019, Binghamton, NY.

[Presentation] Yiding Cao, **Yingjun Dong**, Minjun Kim, Neil MacLaren, Ankita Kulkarni, Shelley Dionne, Francis Yammarino, and Hiroki Sayama, Examining the effects of expertise diversity on collective design and innovation using an online social network experiment and "idea geography" visualization: A secondary report, presented as a talk at the *2019 Conference on Complex Systems (CCS 2019)*, September 30-October 4, 2019, Singapore.

[Proceedings] Yiding Cao, **Yingjun Dong**, Minjun Kim, Neil MacLaren, Ankita Kulkarni, Shelley Dionne, Francis Yammarino, and Hiroki Sayama, Capturing the production of innovative ideas: An online social network experiment and "Idea Geography" visualization, presented as a talk at *CSS 2019: 10th Anniversary International Conference on Computational Social Science*, October 24-27, 2019, Santa Fe, NM.

[Proceedings & Presentation] **Yingjun Dong** and Hiroki Sayama, Mutual-information-based feature selection for facial emotion recognition on light-weight devices, *Proceedings of the 2019 IEEE Symposium Series on Computational Intelligence (IEEE SSCI 2019 - IEEE CIDM 2019)*, December 6-9, 2019, Xiamen, China, IEEE.

[Presentation] Yiding Cao, **Yingjun Dong**, Minjun Kim, Neil MacLaren, Shelley Dionne, Francis Yammarino, and Hiroki Sayama, Background diversity and network structure in collective design and innovation: Perspectives with online social network experiments, *NetSci 2020: International School and Conference on Network Science*, September 17-25, 2020, Rome, Italy.

[Journal] Shun Cao, Neil G. MacLaren, Yiding Cao, **Yingjun Dong**, Hiroki Sayama, Francis J. Yammarino, Shelley D. Dionne, Michael D. Mumford, Shane Connelly, Robert W. Martin, Colleen J. Standish, Tanner R. Newbold, Samantha England, and Gregory A. Ruark, An agent-based model of leader emergence and leadership perception within a collective, *Complexity*, 6857891, 2020.

[Preprint] **Yingjun Dong**, Neil G. MacLaren, Yiding Cao, Francis J. Yammarino, Shelley D. Dionne, Michael D. Mumford, Shane Connelly, Hiroki Sayama, and Gregory A. Ruark, Speaker Diarization Using Stereo Audio Channels: Preliminary Study on Utterance Clustering. *arXiv preprint arXiv:2009.05076*, 2020.

Course Projects

Community Analysis of Social Network Separation

May 2018

- ◆ In this team project, we separate the Facebook Social Network into two groups which have different level of degree.
- ◆ We analyzed necessary properties of networks, such as the number of edges, average clustering coefficient, number of communities and the largest communities of respective networks.
- ◆ Tools: Python

Agent-Based Model on Population Migration

December 2017

- ◆ In this team project, we built dynamic model for population migration.
- ◆ Tools: Python

Markov Chain Based Modeling and Analysis of Bank Service Process

December 2017

- ◆ In this team project, we applied markov chain to build dynamic model for bank service and do analysis.

Relevant Courses

Stochastic Systems	Advanced Topics in Network Science	Computational Tools	Econometric Method
Applied Probability and Statistics	Operation Research	Macroeconomics Theory	Markets with Fictions
Introduction to System Science	Fuzzy Sets, Fuzzy Logic and Fuzzy Systems	Economic Forecasting	
Modeling and Simulation	Collective Dynamics of Complex Systems	Microeconomics Theory	

Volunteer Activities

Math Tutor at Elementary School

March – May 2016

- ◆ Location: Endicott, USA
- ◆ Helped kids to complete math works.

Volunteer at Jinan City Children Welfare House

August 2014

- ◆ Location: Jinan, China
- ◆ Cleaned kids' toys and played game with disability kids.

Honors & Awards

The 13th Challenge Cup of College Students Extra-Curricular Academic Technology Works Competition

May 2013

- ◆ Awards: The Second Prize in Provincial-level.
- ◆ Location: Jinan, China