

Xin Wang

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RESEARCH INTERESTS

Computational Social Science, Natural Language Processing, Machine Learning, Network Analysis, GIS, Image Diagnosis, Artificial life

APPOINTMENT

BIG DATA & AI Lab, IntelligentRabbit LLC.

COVID-19 Research Team Leader
Research Assistant

Monmouth JCT, NJ
Jan 2020 – Present
May 2019 – Jan 2020

AI HUB, GEC academy

Instructor

Beijing, China
Jan 2021 - Present

Tianjin Value Fair Technology Inc.

Machine Learning Engineer

Tianjin, China
Aug 2017 – Dec 2017

EDUCATION

Master of Science (M.S.) in Data Science (GPA: 4.0/4.0, Top 1)

Data Science Institute, Saint Peter's University

Aug 2016 – Dec 2018

- **Dissertation:** Industry Classification on Company Annual Report using Machine Learning
- Advisors: Dr. Finn Robert, Dr. Sylvain Jaume.

Bachelor of Science (B.S.) in Industrial Engineering

Department of Aeronautical Engineering, Civil Aviation University of China

Sep 2010 – Jul 2014

- **Dissertation:** Maintenance Plan Scheduling with Capability Constraints Based on Genetic Algorithm.
- Advisor: Dr. Weigang Zhang

PUBLICATIONS

[Book] Zhao P., **Wang X.**, & Chen X. (2021). *Applied Big Data Analytics and Its Role in COVID-19*. IGI Global. in Review.

[Journal] **Wang X.**, Chen X., Bolian L. & Zhao P. (2021). Constructing an Anti-Asian Hate Indicator for Pandemic-related Comments from Mainstream Media YouTube Channels. *International Journal of Society Systems Science (IJSSS)*. Publish in process.

[Journal] Zhao, P., Chen, X., & **Wang, X.** (2021). Classifying COVID-19-related hate Twitter users using deep neural networks with sentiment-based features and geopolitical factors. *International Journal of Society Systems Science*, 13(2), 125-139. DOI: [10.1504/IJSSS.2021.116373](https://doi.org/10.1504/IJSSS.2021.116373)

[Journal] **Wang, X.**, Zhao, P., & Chen, X. (2020). Fake news and misinformation detection on headlines of COVID-19 using deep learning algorithms. *International Journal of Data Science*, 5(4), 316-332. DOI: [10.1504/IJDS.2020.115873](https://doi.org/10.1504/IJDS.2020.115873)

[Journal] **Wang, X.**, Chen, X., & Zhao, P. (2020). The relationship between Bitcoin and stock market. *International Journal of Operations Research and Information Systems (IJORIS)*, 11(2), 22-35. DOI: [10.4018/IJORIS.2020040102](https://doi.org/10.4018/IJORIS.2020040102) (Acceptance rate: 42%)

[Journal] Xiao H., **Wang X.**, & Zhao, P. (2019). Satellite Image Recognition for Smart Ships Using A Convolutional Neural Networks Algorithm. *International Journal of Decision Science (IJDS)*, 10(2), 85-91.

[Journal] Subramaniam V., Srungarapu G., Matijosaitiene I., Supe M., Agarwal A., Zhao P., **Wang X.**, Kwartler E. and Jaume S.(2016). Geospatial and Temporal Data Analysis on the New York City Taxi Trip. *International Journal of Data Analysis and Information Systems*, 8(2), 63-73.

[Journal] **Wang X.** (2015). Study on Scheduling Algorithm Based on Capacity Constraints of Maintenance Plan. *Industrial Engineering Practice*. ISSN 2304-5337.

RESEARCHES

COVID-19 Anti-Asian Hate in Social Media Research Project

2020-2021

▪ Twitter Research (Geographic Information Analysis, Deep Learning)

- Led the team to collect over 10 million tweets by tracking pandemic-related Twitter users between January 15 and October 15, 2020, through setting up Twitter API on Amazon AWS EC2 cluster.
- Created new features using VADER sentiment analysis. Labeled each twitter user as constantly like, constantly dislike, swing, or does-not-care towards Trump, Biden, Republican, and Democratic.
- Visualized geopolitical difference on heatmaps with the combination of geolocation data and election information.

- Evaluated feature importance by build a random forest algorithm and analyzed the model performance by using only sentiment-based features in DNN, which was trained on AWS EC2 cluster.
- **YouTube Research (Signal Processing, Sentiment Analysis, Time Series Analysis)**
 - Collected 1,452,373 comments from COVID-19-related news from mainstream media YouTube channels using YouTube Data API and Facepager.
 - Extracted sample data based on Anti-Asian hate hashtags and keywords. Manually labeling the 3,756 YouTube comments to perform anti-Asian hate classification using SVM, Random Forest, LSTM, CNN models.
 - Established anti-Asian hate indicator to portray the tendency of hate over time through the generated daily hate signal.

COVID-19 Fake News Monitoring and Misinformation Detection System Project 2020

- Built a Python-based web scraper robot to collect 8,810 fake news during January, 2020 to August, 2020 from the CoronaVirusFacts/DatosCoronaVirus Alliance Database on Poynter.
- Collected and cleaned 1,673,354 real news by dealing with the semi-unstructured data from AYLIEN News API using Python programming.
- Performed LSTM, CNN, and DBN models on fake news detection and evaluated mainstream media credibility based on the an algorithm-based ranking methods.
- Built COVID-19 fake news detection application with interactive interface based on Flask framework.

Bitcoin Prediction Research Project 2019

- Based on the predictive VAR model to analyze the impulse response between the parameters for stock and Bitcoin market.
- Utilized sliding window technique to optimize the prediction results.

Smart Ship Recognition on Satellite Imagery 2019

- Extracted pixel data from JSON object to perform image classification using Python programming.
- Built CNN model to recognize ships in the bay and sea areas from satellite images.

More researches and details are presented in Projects section at <https://xin-wang-kr.github.io>

HONORS & AWARDS

SCHOLARSHIPS

- **ALife 2020 Student Scholarship** 2020
Awarded by ALife 2020 Organizing Committee
- **Second Prize Scholarship** 2012, 2013
For academic excellence at Department of Industrial Engineering at CAUC (for top 10)
- **Third Prize Scholarship** 2011
For academic excellence at Department of Industrial Engineering at CAUC (for top 15)

AWARDS AND COMPETITIONS

- **Outstanding Mobile App (Andriod mobile app - Java)** 2016
Awarded by 2016 Google Developer StudyJams (100/400)
- **Third Prize of 2014 Cross-Strait Contest of Outstanding Bachelor's Degree Thesis** 2014
Awarded by Chinese Institute of Industrial Engineering (10/15)
- **Outstanding Student Award** 2011, 2012, 2013
Awarded as an excellent student at Civil Aviation University of China

MENTORING PROJECTS

BIG DATA & AI Lab, IntelligentRabbit LLC.

- A New Solution of the Social Distancing and Face Mask Monitor Using Deep Learning Algorithms
- Fake News Monitoring and Anti-rumor System Using DL & Blockchain
- AI Drives Music Self-creation with Deep Learning in Tensorflow

TEACHING

BIG DATA & AI Lab, IntelligentRabbit LLC.

Instructor

Jan 2020 - Present

- Mobile App Development: Python Kivy (Fall 2020)
- Python Programming in AI (Summer 2020)

GEC Academy

Instructor, AI Hub

Aug 2021 – Oct 2021

- Academic writing (Graduate level)

Teaching assistant

Apr 2020 – Jan 2021

- Machine Learning in Biomedical Monitoring (by Prof Maarten De Vos at Katholieke Universiteit Leuven)
- Applied Machine Learning (by Prof Stephen Collgeshall at University of Southern California)
- Algorithmic Foundations of Learning (by Prof Patrick Rebeschini at Oxford University)
- Introduction of Machine Learning (by Prof Jovan Ilic at Carnegie Mellon University)

Data Science Institute, Saint Peter's University

Teaching assistant

Jan 2017 – May 2018

- Data Mining (Graduate Level, Spring 2018)
- Statistical Programming: R and SAS (Graduate level, Spring 2017)

VOLUNTEERING

DataKind Global

Data Science Volunteer

Jan 2019 – Present

- Google AI Impact Challenge
- data.org Challenge

Evaluated data reliability and human-centered ML rules for the challenge projects.

Marks JCH of Bensonhurst

Web Developer Volunteer

Jun 2017 – Aug 2017

Developed class registration web application using Django, MySQL, HTML, CSS.

Dreamland Plus

Data Analysis Volunteer

Nov 2015 – Aug 2016

Collected genealogy data from minority community groups. Generated data visualization dashboard and performed genealogy relationship analysis using Tableau.

CONFERENCES /WORKSHOP ATTENDED

- Virtual Complex Systems & Data Science Seminar Sereis, University of Vermont Nov 2021
- Samsung AI Forum, Samsung Nov 2021
- Virtual DataDive Event 2021, DataKind Global Sep 2021
- 2020 IDEAS Global AI Conference, International Data Engineering and Science Association Oct 2020
- ALife 2020, International Society for Artificial Life Jul 2020

TECHNICAL SKILLS

- **Programming:** Python, R, SAS, C++, Java
- **Mobile/web Application:** Django, Flask, Kivy, HTML
- **Big Data:** Hadoop, Spark, Amazon AWS, Hive
- **Database:** MySQL, PostgreSQL

LANGUAGES

- **English** (fluent)
- **Portuguese** (elementary)
- **Korean** (intermediate)
- **Chinese** (native)