

# Zhu Wang

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**Research Interests** My research interests are primarily in Deep Learning models and Graph Mining. Particularly, I am working on their interdisciplinary field therein to solve image classification, object detection and vision-and-language related tasks.

**Skills**

- **Language/Script:** JAVA, Python, PHP, SQL, R, JavaScript, XML
- **Tools:** TensorFlow, PyTorch, OWL API, RDFlib, Neo4j, Maven, MangoDB, Spark

**Education**

University of Illinois at Chicago	Expected 12/2023
<b>Doctor of Philosophy</b> , Computer Science, Advisor: Dr. Isabel Cruz( <i>deceased</i> )	
University of Pittsburgh	08/2013 - 05/2015
<b>Master of Science</b> , Information Science	
Northeastern University, China	09/2008 - 06/2012
<b>Bachelor of Management</b> , Information Management and System	

**Research Experience**

**Research Assistant**, AIOpt Lab, University of Illinois at Chicago 11/2021 - now

**Multimodal analysis on vision-and-language deep models**

- Integrating prior knowledge and modalities interaction of visual and textual encoders
- Working on Knowledge Graph based data augmentation and visual relations

**Research Assistant**, ADVIS Lab, University of Illinois at Chicago 08/2016 - now

**Knowledge Graph Embedding with Bootstrapping for Deep Matching**

- Working on large pre-training language models for ontology matching, as BERT, MiniLM
- Applied several knowledge graph embedding methods with Tensorflow

**Impact of COVID-19 on Education Based on Geotagged Twitter**

- Collected millions of COVID19 education related Geotagged Twitter dataset
- Learned dataset via spatio-temporal patterns, sentiment analysis and content analysis with topic modelling

**Visual Analytics for Ontology Matching**

- Built a Visual Analytics panel and re-design the interfaces of AgreementMaker
- Learned ontology alignments with user interaction and user study

**Exploring Yelp Data to Predict Foodborne Illness in Chicago Area**

- Worked on language models and predictions models for preventing foodborne illness using Yelp dataset as part of “Chicago SmartData Platform”
- Implemented kinds of prediction models and network anomaly detections

**Research Assistant**, Pittsburgh Computational Social Science Lab 05/2015 - 03/2016

The Evolution of Scientific Productivity of Junior Scholars

- Developed research methods and techniques for scholarly knowledge discovery

Zhu Wang

- Implemented link predictions of junior scholars with senior scholars using similarity algorithms and models

<b>Work Experience</b>	<b>Teaching Assistant</b> , University of Illinois at Chicago	2016 - now
	Courses: Program Design I & II, Introduction to Data Science, Introduction to Machine Learning, Database Systems, Data and Web Semantics	
	<b>Research &amp; Data science Intern</b> , CCCIS, Chicago, IL	05/2022 – 08/2022
	<ul style="list-style-type: none"> <li>• Constructed industrial vehicle knowledge graphs</li> <li>• Trained transformer-based damaged panel prediction models based on car images, and bootstrapped models with more robust performance with Graph neural network.</li> </ul>	
	<b>Software Engineer</b> , R.J. Lee Group, INC, Monroeville, PA	05/2015 - 06/2016
<b>Other Projects</b>	<ul style="list-style-type: none"> <li>• Developed automated configuration tools embedded in web-based laboratory software</li> <li>• Full-stack development of an IOS application to track and analysis nutrition daily intake</li> </ul>	
	<b>Data Analyst</b> , China Foundation Center, China	09/2012 - 06/2013
	<ul style="list-style-type: none"> <li>• Analyzed different foundations development trends and published reports to customers</li> </ul>	
	<b>Prediction and monitoring of Safe-Driving Behaviors</b>	02-05/2019
	<ul style="list-style-type: none"> <li>• Developed a system to detect eyes closeness and distracted behaviors</li> <li>• Implemented facial recognition and behaviors detection using CNN and DNN</li> </ul>	
<b>Selected Publications</b>	<b>Collective Behavior During Emergencies and Other Exogenous Events</b>	05-12/2015
	<ul style="list-style-type: none"> <li>• Worked on issues and challenges relating to emergency understanding using largescale data generated by hundreds of millions of users</li> <li>• Implemented time series analysis and sentiment analysis of Tweets related with emergencies</li> </ul>	
	<b>Hadoop: Movie Tagging and Recommendations</b>	01-05/2015
	<ul style="list-style-type: none"> <li>• Developed a web application to tagged amazon movies and recommend movies for users by their previous ratings and reviews</li> <li>• Implemented text mining and user-based recommend algorithms using MapReduce on Hadoop</li> </ul>	
	<p>[1] <b>Wang, Zhu</b>, and Isabel F. Cruz. AgreementMakerDeep Results for OAEI 2021. In OM@ISWC 2021.</p> <p>[2] <b>Wang, Zhu</b>, and Isabel F. Cruz. Analysis of the impact of covid-19 on education based on geotagged twitter. Proceedings of the 1st ACM SIGSPATIAL International Workshop on Modeling and Understanding the Spread of COVID-19. 2020.</p> <p>[3] <b>Wang, Zhu</b>, Booma Sowkarthiga Balasubramani, and Isabel F. Cruz. Predictive analytics using text classification for restaurant inspections. Proceedings of the 3rd ACM SIGSPATIAL Workshop on Smart Cities and Urban Analytics. 2017.</p>	
<b>Awards</b>	Graduate Student Council Travel Award, University of Illinois at Chicago	2018
	Graduate SIS Scholarship, University of Pittsburgh	2015