

ZHU WANG

✉ zwang260@uic.edu 🖥️ [Personal Website](#) 🌐 [Github](#) **in** [Linkedin](#) **G** [Google Scholar](#)

♥ RESEARCH INTERESTS

My research interests are primarily in learning representations and optimizations via deep neural network and graph models. Particularly, I am working on their interdisciplinary field therein to solve computer vision and multimodal related tasks.

🎓 EDUCATION

University of Illinois at Chicago Expected 12/2024
Ph.D., Computer Science Advisor: Sathya N. Ravi, Isabel Cruz (deceased)

University of Pittsburgh 2013 - 2015
MS, Information Science Advisor: Paul Munro

Northeastern University, China 2008 - 2012
BMgt., Information Management and System Advisor: Zhuchao Yu

🏢 PROFESSIONAL EXPERIENCE

Research Assistant, AIOpt Lab, University of Illinois at Chicago 2022 - present
Multimodal representation learning and applications

- Integrating prior knowledge and modalities interaction of large Vision-Language models
- Open-vocabulary object detection and segmentation
- Prompt-based image edit and generations
- Applications on patent data analysis

Research & Data science Intern, CCCIS, Chicago, IL 05/2022 - 08/2022
Vehicle damage prediction via images and knowledge graphs

- Constructed multimodal industrial vehicle knowledge graphs
- Trained transformer-based damaged panel prediction models based on car images, and bootstrapped models with more robust performance with GNN

Teaching Assistant, University of Illinois at Chicago 2016 - 2022
Courses: Program Design I & II, Introduction to Data Science, Introduction to Machine Learning, Database Systems, Data and Web Semantics

Research Assistant, ADVIS Lab, University of Illinois at Chicago 2016 - 2021
Applying machine learning methods on ontology matching

- Knowledge graph embedding with bootstrapping for ontology matching
- Self-supervised learning and in context learning for ontology matching via LLM

Data management and analytics for healthcare

- Impact of COVID-19 on Education Based on Geotagged Twitter
- Exploring Yelp Data to Predict Foodborne Illness in Chicago Area

Research Assistant, PICSO Lab, University of Pittsburgh 2014 - 2016
Scholarly knowledge discovery and link predictions for junior scholars

☰ PUBLICATIONS

Implicit Differentiable Outlier Detection Enable Robust Deep Multimodal Analysis
Thirty-seventh Conference on Neural Information Processing Systems (NeurIPS) 2023

Zhu Wang, Sourav Medya, Sathya N. Ravi

TL;DR: An end-to-end VL model incorporating explicit knowledge graphs and OOD-detection.

Contextualized Structural Self-supervised Learning for Ontology Matching

The 18th International Workshop on Ontology Matching (OM@ISWC) 2023

Zhu Wang

AMD Results for OAEI 2022

The 17th International Workshop on Ontology Matching (OM@ISWC) 2022

Zhu Wang

AgreementMakerDeep Results for OAEI 2021

The 16th International Workshop on Ontology Matching (OM@ISWC) 2021

Zhu Wang, Isabel 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

Zhu Wang, Isabel Cruz

Predictive analytics using text classification for restaurant inspections

Proceedings of the 3rd ACM SIGSPATIAL Workshop on Smart Cities and Urban Analytics

Zhu Wang, Booma Sowkarthiga Balasubramani, Isabel Cruz

✍ PUBLICATIONS IN REVIEW

Accelerated Neural Network Training with Rooted Logistic Objectives

Zhu Wang, Praveen Raj Veluswami, Harsh Mishra, Sathya N Ravi

Prompt-based generative image models with keypoints

Zhu Wang, Praveen Raj Veluswami, Sathya N Ravi

Improving open-vocabulary SAM Segmentation using Diffused Cuts

Zhu Wang, Harsh Mishra, Sathya N Ravi

A Comprehensive Survey on AI-based Methods for Patents

Homaira Huda Shomee, **Zhu Wang**, Sathya N Ravi, Sourav Medya

Targeted Unlearning with Applications in Ophthalmic Disease Diagnosis

George Nahass, **Zhu Wang**, Won Hwa Kim, Darvin Yi, Sathya N Ravi

👤 ACADEMIC SERVICES

Conference Reviewer: AISTAT 23&24, NeurIPS 23, ICLR 24, ICML 24, ECCV 24, and MICCAI 24

Guest Editor: Special issue on Ontology Matching and Machine Learning of the Semantic Web Journal

🏆 AWARDS

Graduate Student Council Travel Award, University of Illinois at Chicago 2018

Graduate SIS Scholarship, University of Pittsburgh 2015

National Undergraduate Scholarship (multiple times), Northeastern University, China 2008-2012

⚙ SKILLS

Language/Script: JAVA, Python, PHP, SQL, R, JavaScript, XML

Tools: TensorFlow, PyTorch, OWL API, RDFlib, Neo4j, Maven, MangoDB, Spark, L^AT_EX