Yaxin Cui

2145 Sheridan Rd., Tech AG 14, Evanston, IL 60208

(773)313-5306   yaxincui2023@u.northwestern.edu

EDUCATION

Northwestern University, Evanston, IL   September 2018 – Present
Ph.D. in Mechanical Engineering – Cumulative GPA: 3.94/4.0
Dissertation on data-driven based network modeling approach for modeling consumer preference, Advisor: Dr. Wei Chen
Shanghai Jiao Tong University, Shanghai, China   September 2014 – June 2018
B.E. in Mechanical Engineering – Major GPA: 3.8/4.0

RESEARCH AND INTERNSHIP EXPERIENCE

Northwestern University | Evanston, IL
Research Assistant in Integrated DEsign Automation Laboratory (IDEAL)   June 2019 – Present
- Developed a data-driven network modeling approach to model consumer preference and proposed a new method to model vehicle competition using statistical models for weighted social networks using Exponential Random Graph Models.
- Implementing Graph Neural Network on predicting vehicle competition networks based on customers survey data. The developed methods improves the prediction accuracy by 8% compared to the traditional statistical network models.
- Assisted in writing a successful NSF grant proposal on "Collaborative Research: A Hierarchical Multidimensional Network-based Approach for Multi-Competitor Product Design".

SAIC Volkswagen Automotive Co., Ltd. | Shanghai, China   March 2018 – June 2018
Bachelor Thesis Intern
- Designed the algorithm of automatic positioning and handling of electric car battery packs based on computer vision guidance. Programmed in MATLAB and Cognex Vision software.
- Carried out the on-site test of industrial robots, and the optimized automated operations remained in use in the company.

ZF (China) Investment Co., Ltd. | Shanghai, China   January 2018 – June 2018
Product Management Intern
- Optimized the connection system between the product manufacturing site and the central SQL database.
- Designed the user interface for the operators.

Institute of Product Engineering at Karlsruhe Institute of Technology | Karlsruhe, Germany   June 2017 – July 2017
Research Assistant on Data Mining and Data Modeling
- Independently optimized the data mining method using a web crawler script, which reduced the original data collection time by five. The method has been generalized to have broader applications for efficiency improvements.

PUBLICATIONS

Cui, Y., Ahmed, F., Sha, Z., Wang, L., Fu, Y., & Chen, W. (2016, August). A weighted network modeling approach for analyzing product competition. In International Design Engineering Technical Conferences and Computers and Information in Engineering Conference American Society of Mechanical Engineers.

PATENTS

Jiarui Liao, Jianwen Ge, **Yaxin Cui**, Lincong Yang, Yaohui Huang, Mengqi Liu, Liqiang Gu, Passive knee rehabilitation machine

Honors & Awards

Segal Design Research Fellowship | Northwestern University   September 2019
- Awarded to Ph.D. students conducting outstanding interdisciplinary design research.

ASME (American Society of Mechanical Engineers) Hackathon 2nd place. | ASME Hackathon Committee   August 2020
- Implemented CNN to predict the melting pool parameters in AM (additive manufacturing) and Condition-GAN to predict the melting pool images.
- Integrated multi-modality features into one model, including building command, camera images and manufacturing locations, designed a feature set by converting manufacture parameters into images using physical principles.

LEADERSHIP

Graduate Leader, English Development through Guided Exploration | Evanston, IL   September 2019 – December 2019
Organized events around Chicago to expose international graduate students new to Northwestern to the local surroundings and culture.

SKILLS

Languages: R, Python, MATLAB, SQL
Methods: Data-driven statistical modeling, network modeling, machine learning, deep learning, optimization