

ZHANGYUE SHI

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School of Industrial Engineering & Management
Oklahoma State University, Stillwater, OK 74078

EDUCATION

- **Ph.D.** major in Industrial Engineering & Management, minor in Statistics, Oklahoma State University, August 2023 (Expected)
- **B.S.** in Mechanical Engineering, Xi'an Jiaotong University, China, June 2019

RESEARCH INTEREST

- Advanced data analytics for quality assurance in smart manufacturing
- Cyber-physical security protection for smart manufacturing system

SELECTED HONORS AND AWARDS

- Outstanding Graduate Student, School of Industrial Engineering and Management, Oklahoma State University, 2022
- NSF Student Support Award, North American Manufacturing Research Conference (NAMRC) 49 / ASME International Manufacturing Science and Engineering Conference (MSEC 2021), Virtual Conference, 2021
- Awardee, ASME-CIE Graduate Research Poster Session, International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC-CIE 2021), Virtual Conference, 2021
- Data Challenge Award Finalist, Quality, Statistics and Reliability (QSR) Section, INFORMS Annual Meeting, Seattle, WA, 2019
- Outstanding Undergraduate Graduates, Xi'an Jiaotong University, China, 2019
- Second Prize, National Collegiate Mechanical Product Digital Design Contest, Ministry of Education, China, 2018
- First Prize, National College Students Mathematical Modeling Competition Undergraduate Group Shaanxi Division, China, 2017

PUBLICATIONS

Journal Publications-Published

- **Zhangyue Shi**, Chen Kan, Wenmeng Tian and Chenang Liu, 2021, “*A Blockchain-based G-code Protection Approach for Cyber-Physical Security in Additive Manufacturing*”, ASME Journal of Computing and Information Science in Engineering 21, no. 4 (2021). <https://doi.org/10.1115/1.4048966>
- **Zhangyue Shi**, Abdullah Al Mamun, Chen Kan, Wenmeng Tian and Chenang Liu, 2021 “*An LSTM-Autoencoder Based Online Side Channel Monitoring Approach for Cyber-Physical Attack Detection in Additive Manufacturing*”, Journal of Intelligent Manufacturing. <https://doi.org/10.1007/s10845-021-01879-9>
- Yuxuan Li, **Zhangyue Shi**, Chenang Liu, Wenmeng Tian, Zhenyu (James) Kong, and Christopher B. Williams, 2021, “*Augmented Time Regularized Generative Adversarial Network (ATR-GAN) for Data Augmentation in Online Process Anomaly Detection*”, IEEE Transactions on Automation Science and Engineering. <https://doi.org/10.1109/TASE.2021.3118635> (This work is selected as the finalist of the Data Challenge Award, QSR Section, INFORMS, 2019)

Journal Publications-Submitted

- **Zhangyue Shi**, Soumya Mandal, Sandip Harimkar, and Chenang Liu, 2021 “*Hybrid Data-Driven Feature Extraction-Enabled Surface Morphology Analysis in Additive Manufacturing with Laser Engineered Net Shaping*”, submitted.

Conference Publications-Published

- **Zhangyue Shi**, Soumya Mandal, Sandip Harimkar, and Chenang Liu, 2021, “*Surface Morphology Analysis Using Convolutional Autoencoder in Additive Manufacturing with Laser Engineered Net Shaping*”, Procedia Manufacturing, 53, 16-23. <https://doi.org/10.1016/j.promfg.2021.06.005>
- **Zhangyue Shi**, Chenang Liu, Chen Kan, Wenmeng Tian, and Yang Chen, 2021, “*A Blockchain-enabled Online Stream Data Protection Approach for Cyber-Physical Security in Advanced Manufacturing*”, In International Design Engineering Technical Conferences and Computers and Information in Engineering Conference (Vol. 85376,

p. V002T02A035), American Society of Mechanical Engineers.
<https://doi.org/10.1115/DETC2021-72023>

TEACHING EXPERIENCES

- Teaching Assistant, School of Industrial Engineering and Management, Oklahoma State University, Fall 2020 – present
 - IEM 3303/MET 3543 Manufacturing Processes
 - IEM 3713 Software Programming for Data Analytics
 - IEM 4103 Quality Control and Reliability Analysis
 - IEM 4613 Production Planning and Control Systems
 - IEM 5103 Breakthrough Quality and Reliability
 - IEM 5613 Integrated Manufacturing Control Systems

INVITED PRESENTATIONS

Conference Presentation

- Data Augmentation for Rare Events in Multivariate Time Series, 2019, QSR Section, INFORMS Annual Conference, Seattle, WA
- A Semi-parametric Representation Learning Approach for Surface Analysis in Additive Manufacturing, 2020, QSR Section, INFORMS Virtual Annual Conference
- Surface Morphology Analysis Using Convolutional Autoencoder in Additive Manufacturing with Laser Engineered Net Shaping, 2021, the 49th NAMRI/SME North American Manufacturing Research Conference (NAMRC), Virtual Conference
- A Blockchain-enabled Online Stream Data Protection Approach for Cyber-Physical Security in Advanced Manufacturing, 2021, the ASME 2021 Virtual International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC-CIE 2021), Virtual Conference
- An LSTM-autoencoder Based Online Side Channel Monitoring Approach for Cyber-physical Attack Detection in Additive Manufacturing, 2021, QSR Section, INFORMS Annual Conference, Anaheim, LA
- Surface Morphology Analysis Using Robust Autoencoder in Additive Manufacturing with Laser Engineered Net Shaping, 2021, QSR Section, INFORMS Annual Conference, Anaheim, LA

Poster Presentations

- A Blockchain-enabled Approach for Cyber-physical Security in Advanced Manufacturing, 2021, the ASME International Manufacturing Science and Engineering Conference (MSEC) 2021, Virtual Conference
- Surface Morphology Analysis Using Robust Autoencoder in Additive Manufacturing with Laser Engineered Net Shaping, 2021, Graduate Research Poster Session, IDETC-CIE 2021, Virtual Conference
- A Blockchain-enabled Approach for Cyber-physical Security in Advanced Manufacturing, 2021, INFORMS Annual Conference, Anaheim, LA

Seminar

- Data-Driven Quality Assurance in Smart Additive Manufacturing, 2021, Graduate Seminar of the Department of Industrial and Manufacturing Engineering, North Dakota State University

PROFESSIONAL SOCIETY MEMBERSHIPS

- Institute for Operations Research and the Management Sciences (INFORMS)
- Institute of Industrial and Systems Engineers (IISE)
- American Society of Mechanical Engineers (ASME)

SERVICE

- **President** - Institute for Operations Research and the Management Sciences (INFORMS) Oklahoma State University Student Chapter (winner of the INFORMS 2021 Student Chapter Annual Award as an honorable mention chapter)
- **Journal reviewer** - Healthcare Analytics
- **Conference reviewer** - the 50th North American Manufacturing Research Conference (NAMRC 50)