Yajun Lu

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Department of Management & Marketing
College of Business & Industry
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Appointments

Department of Management & Marketing — **Jacksonville State University**
Assistant Professor of Analytics & Operations Management — August 2021–Present

Department of Analytics & Operations Management — **Bucknell University**
Visiting Assistant Professor of Business Analytics — August 2019–May 2021

Department of Industrial Engineering — **Huawei Technologies Co., Ltd.**
Industrial Engineer — March 2011–July 2014
Job duty: Data Analytics, Supply Chain Management, Manufacturing

Education

Ph.D., Industrial Engineering & Management (GPA: 3.8/4) 2014–2019
Oklahoma State University, Stillwater, Oklahoma
Dissertation title: Finding second-order clubs (Advisor: Dr. Baski Balasundaram)

M.S., Industrial Engineering 2008–2011
Huazhong University of Science and Technology, Wuhan, China

B.S., Industrial Engineering 2004–2008
Zhongyuan University of Technology, Zhengzhou, China

Research Interests

- Business Analytics, Healthcare Analytics, Graph-based Data Mining, Optimization Problems on Social Networks

Publications

Refereed Journal Papers

1. **Yajun Lu**, Zhuqi Miao, Parisa Sahraeian, and Balabhaskar Balasundaram. On Atomic Cliques in Temporal Graphs, *Optimization Letters*, 2023, https://doi.org/10.1007/s11590-023-01975-0
2. **Yajun Lu**, Hosseinali Salemi, Balabhaskar Balasundaram, and Austin Buchanan. On finding fault-tolerant low-diameter clusters in graphs, *INFORMS Journal on Computing*, 34(6):3181-3199, 2022
3. **Yajun Lu**, Suhao Chen, Zhuqi Miao, Dursun Delen, and Andrew Gin. Clustering temporal disease networks to assist clinical decision support systems in visual analytics of comorbidity progression. *Decision Support Systems*, 148:113583, 2021
4. Chun-Miin Chen and **Yajun Lu**. Shipment Sizing for Autonomous Trucks of Road Freight. *International Journal of Logistics Management*, 32(2):413–433, 2021

5. **Yajun Lu**, Esmaeel Moradi, and Balabhaskar Balasundaram. Correction to: Finding a maximum k-club using the k-clique formulation and canonical hypercube cuts, *Optimization Letters*, 12(8):1959–1969, 2018

6. **Yajun Lu** and J. Cecil. An Internet of Things (IoT)-based collaborative framework for advanced manufacturing, *The International Journal of Advanced Manufacturing Technology*, 84(5-8):1141–1152, 2016

7. J. Cecil, Bharathi Raj Kumar, **Yajun Lu**, and Vinod Basallali. A review of micro-devices assembly techniques and technology, *The International Journal of Advanced Manufacturing Technology*, 83(9-12):1569–1581, 2016

8. **Yajun Lu**, Qingjiang Han, and Yunqing Rao. Path optimization in metal cutting based on common line cutting method, *Machinery Design and Manufacture*, 6:120–122, 2011

9. Qingjiang Han, **Yajun Lu**, and Yunqing Rao. Plate cutting NC machining Simulation system based on OpenGL, *Manufacturing Automation*, 32(11):57–62, 2010

Refereed Conference Proceedings

10. **Yajun Lu**, J. Cecil, Blayne Mayfield, and Parmesh Ramanathan. A next generation IoT based approach for collaborative manufacturing, *Proceedings of the 2016 Industrial and Systems Engineering Research Conference*, Anaheim, CA, May 2016

11. **Yajun Lu**, J. Cecil, and Zak Zafar. The creation of Collaborative Cyber Physical Environments for Micro Assembly. *Proceedings of the ASME 2015 International Mechanical Engineering Congress and Exposition*, Houston, TX, November 13-19, 2015

12. **Yajun Lu** and J. Cecil. An internet of things (IoT) based cyber physical framework for advanced manufacturing. *In OTM Confederated International Conferences "On the Move to Meaningful Internet Systems"*, pp. 66-74, Springer, October 2015

Working Papers

13. Balancing the Scale and the Accuracy of a Risk Index: An Enhanced Automatic Risk Score Generator for Health Condition Prediction (joint work with Thanh Duong, Thanh Thieu, Zhuqi Miao, and Dursun Delen).

14. On Induced Conflict Formulation for Fault-Tolerant Low-Diameter Clusters (joint work with Balabhaskar Balasundaram).

15. Detecting Cliques with High Mortality Rates in a Comorbidity Network (joint work with Balabhaskar Balasundaram, Ramesh Sharda, Pankush Kalgotra, Zhuqi Miao, and Parisa Vaghfi Mohebbi).

16. Contagion Mechanism of Psychological Functioning in a Temporal Network (joint work with Chao Liu and J. Littleton).

Selected Conference Presentations

1. **Yajun Lu**, Zhuqi Miao, Parisa Sahraeian, and Balabhaskar Balasundaram. On Atomic Cliques in Temporal Graphs, Workshop: PANOPTIC View On Global Optimization, March 9-10, 2023, University of Florida, Gainesville, Florida

2. **Yajun Lu**, Thanh Duong, Thanh Thieu, and Zhuqi Miao. Balancing the Scale and the Accuracy of a Risk Index: An Enhanced Automatic Risk Score Generator for Health Condition Prediction. INFORMS 2022 Annual Meeting, October 16-19, 2022, Indianapolis, Indiana.

3. **Yajun Lu**, Suhao Chen, Zhuqi Miao, Dursun Delen, and Andrew Gin. Clustering Temporal Disease Networks to Assist Clinical Decision Support Systems in Visual Analytics of Comorbidity Progression. Decision Sciences Institute, November 19, 2021, Virtual Conference.

4. **Yajun Lu**, Hosseinali Salemi, Balabhaskar Balasundaram, and Austin Buchanan. On finding fault-tolerant low-diameter clusters in graphs. INFORMS 2021 Annual Meeting, October 24–27, 2021, Anaheim, California
5. **Yajun Lu**, Suhao Chen, Zhuqi Miao, Dursun Delen, and Andrew Gin. Detecting Comorbidity Progression Using Temporal Disease Networks: A Case Study on Clostridioides Difficile. DSI 2020 Annual Conference, November 21–23, 2020, Virtual Conference
6. **Yajun Lu**, Hosseinali Salemi, Austin Buchanan, and Balabhaskar Balasundaram. On finding fault-tolerant low-diameter clusters in graphs. INFORMS 2020 Annual Meeting, November 8–11, 2020, Virtual Conference
7. **Yajun Lu**, Suhao Chen, Zhuqi Miao, Dursun Delen, and Andrew Gin. Detecting Comorbidity Progression Using Temporal Disease Networks: A Case Study on Clostridioides Difficile. INFORMS 2020 Annual Meeting, November 8–11, 2020, Virtual Conference
8. **Yajun Lu**, Hosseinali Salemi, Austin Buchanan, and Balabhaskar Balasundaram. On fault-tolerant low-diameter clusters in graphs. INFORMS Telecommunications and Network Analytics Conference (TNAC) 2020, October 20–21, 2020, Virtual Conference
9. **Yajun Lu**, Hosseinali Salemi, Hao Pan, Balabhaskar Balasundaram, Austin Buchanan, and Sunderesh Heragu. Formulation and Solution of Master Production Planning in Large Scale Private Label Manufacturing. DSI 2019 Annual Conference, November 23–25, 2019. New Orleans, Louisiana
10. **Yajun Lu**, Hosseinali Salemi, Balabhaskar Balasundaram, and Austin Buchanan. Fault-tolerant s-clubs. 2019 INFORMS Annual Meeting, October 20–23, 2019, Seattle, Washington
11. **Yajun Lu**, Hosseinali Salemi, Balabhaskar Balasundaram, Austin Buchanan, and Sunderesh Heragu. Formulation and Solution of a Master Production Planning Problem. IISE Annual Conference and Expo 2019, May 18–21, 2019, Orlando, Florida (Presented by coauthor Sunderesh Heragu)
12. **Yajun Lu**, Hosseinali Salemi, Balabhaskar Balasundaram, and Austin Buchanan. Robust low-diameter subgraphs. 2019 INFORMS ALIO International Conference, June 9–12, 2019, Cancún, Mexico (Presented by coauthor Balabhaskar Balasundaram)
13. **Yajun Lu** and Balabhaskar Balasundaram. On detecting second-order 2-clubs in graphs. 2018 INFORMS Annual Meeting, November 4-7, 2018, Phoenix, Arizona
14. **Yajun Lu**, J. Cecil, Blayne Mayfield, and Parmesh Ramanathan. A next generation IoT based approach for collaborative manufacturing. IISE Annual Conference & Expo 2016, May 21-24, 2016, Anaheim, California
15. **Yajun Lu**, J. Cecil, and Zak Zafar. The Creation of Collaborative Cyber Physical Environments for Micro Assembly. ASME 2015 International Mechanical Engineering Congress and Exposition, November 13-19, 2015, Houston, Texas

Teaching Experience

Jacksonville State University

CBA 390: Operations Management (In-person and Online sections)	Spring 2023
BA 550: Supply Chain Analytics (MBA–Hybrid teaching)	Spring 2023
CBA 390: Operations Management (In-person, 2 sections, 4.49/5)	Fall 2022
BA 545: Quantitative Methods for Business Decision Making (MBA–Hybrid teaching, 4.98/5)	Fall 22 Term A
BA 545: Quantitative Methods for Business Decision Making (MBA–Online, 4.85/5)	Summer 2022
CBA 390: Operations Management (Online, 4.91/5)	Summer 2022
BA 550: Supply Chain Analytics (MBA–Hybrid teaching, 4.99/5)	Spring 2022
CBA 390: Operations Management (In-person and Online sections, 4.69/5 and 4.74/5)	Spring 2022
BA 545: Quantitative Methods for Business Decision Making (MBA–Hybrid teaching, 4.9/5)	Fall 2021
CBA 390: Operations Management (4.71/5)	Fall 2021
BA 545: Quantitative Methods for Business Decision Making (MBA–Online, 4.53/5)	Summer 2021
CBA 390: Operations Management (Online, 4.5/5)	Summer 2021

Bucknell University* (There are no teaching evaluation scores but detailed comments at Bucknell)

ANOP 102: Spreadsheet Modeling & Data Analysis (Two sections) – Hybrid teaching	Spring 2021
ANOP 202: Operations Management – Hybrid teaching	Spring 2021
ANOP 102: Spreadsheet Modeling & Data Analysis (Two sections) – Hybrid teaching	Fall 2020
ANOP 202: Operations Management – Hybrid teaching	Fall 2020
MGMT 102: Quantitative Reasoning for Managers (Two sections)	Spring 2020
MGMT 202: Operations Management	Spring 2020
MGMT 102: Quantitative Reasoning for Managers (Two sections)	Fall 2019
MGMT 202: Operations Management	Fall 2019

Oklahoma State University

Instructor (full responsibility), IEM 4013: Operations Research (4.27/5)	Spring 2019
Teaching Assistant, IEM 5013: Introduction to Optimization	Fall 2017
Teaching Assistant, IEM 5003: Probability and Statistics For Engineers	Fall 2016

Research Experience

- ***Research Assistant, Oklahoma State University***
  - Investigate Optimization-based Aggregate Master Planning Tools for Bay Valley Foods LLC using *Python* and *Gurobi*, January 2018–July 2019
  - Developed the cyber-physical framework for advanced manufacturing linking the Next Generation Internet called GENI, August 2014–June 2016
- ***Research Assistant, Huazhong University of Science and Technology***
  - Conducted the research on Steel Plate Nesting and Cutting Optimization, and Production Control System, September 2008–December 2009
  - Implemented an advanced algorithm based on graph theory for common-line cutting steel plate using C++, January 2010–March 2011

Selected Honors & Awards

- Faculty Research Activity Award, Jacksonville State University, Jacksonville, AL, April 2022
- Second Place Prize ($3000), Hacking Health Competition, Geisinger Medical Center, Scranton, PA, October 5, 2019.
- Graduate College Dissertation Writing Workshop Award, Oklahoma State University, January 2019
- Selected for NFORMS Doctoral Student Colloquium, Phoenix, Arizona, November, 2018
- The Best Demo Second Runner-up Award, National Science Foundation (NSF) GENI Engineering Conference 24, Phoenix, Arizona, March 2016
- Recipient of NSF Travel Grant Award to attend GENI Conference 24, March 2016
- Alpha Pi Mu, Oklahoma State University, November 2015
- The Best Demo Second Runner-up Award, US Ignite & NSF GENI Engineering Conference 22, Washington D.C., March 2015
- Recipient of NSF Travel Grant Award to attend GENI Conference 22, March 2015
- Recipient of Oklahoma State University Graduate Fellowship, August 2014
- Recipient of Graduate Fellowship, Huazhong University of Science and Technology, October 2009
- Outstanding Student Award, Zhongyuan University of Technology, September 2006

Service

Reviewer

- European Journal of Operational Research
- INFORMS Journal on Applied Analytics
- Networks
- Archives of Computational Methods in Engineering
- Proceedings of 2021 Decision Sciences Institute Annual Conference
- Proceedings of 2018 IX International Conference Optimization and Applications
- Proceedings of the ASME 2016 International Mechanical Engineering Congress and Exposition

Session Chair

- Network Models in Optimization and Their Applications, INFORMS 2022
- Integer Programming and Combinatorial Optimization, INFORMS 2021
- Integer Programming and Combinatorial Optimization, INFORMS 2020
- Global Optimization Algorithms–Theory and Application, INFORMS 2019

Committee Member

- Undergraduate Curriculum & AOL Committee, Jacksonville State University, Jan 2022–Present
- Scholarship Committee, Jacksonville State University, February 2023–Present

Other Service Activities

- *Sergeant at Arms*, Stillwater Toastmasters Club, July 1, 2018–June 2019
- *President*, Stillwater Toastmasters Club, September 20, 2017–June 30, 2018
- *Vice President Education*, Stillwater Toastmasters Club, July 1, 2017–June 30, 2018
- *Vice Graduate President*, INFORMS at Oklahoma State University Chapter, January 15–August 17, 2017
- *Secretary*, Stillwater Toastmasters Club, July 1, 2016–June 30, 2017
- *Treasurer*, Alpha Pi Mu at Oklahoma State University Chapter, August 18, 2016–January16, 2017

Selected Professional Activities

- Speaker, gave a talk "On Detecting Fault-Tolerant Low-Diameter Clusters in Graphs" at *JSU Faculty Research Symposium 2022*, Jacksonville State University, November 3, 2022
- Participant, *Culverhouse Business Analytics Symposium 2022*, The University of Alabama, October 14, 2022
- Speaker, gave a talk "Clustering Temporal Disease Networks to Assist Clinical Decision Support Systems in Visual Analytics of Comorbidity Progression" at *2022 JSU annual EM D.Sc. Integrative Seminar*, JSU Department of Emergency Management and Public Administration, August 10, 2022
- Participant, *Faculty Homecoming Workshop*, JSU Faculty Commons, Jacksonville State University, August 2, 2021
- Participant, *Diversity Advocate Training*, Bucknell University, February 19, 2020
- Participant, *New Faculty Pedagogy Series*, Teaching & Learning Center, Bucknell University, Fall 2019 and Spring 2020

- ◇ Participant, *Special Topics in Grantsmanship*, Oklahoma State University, Spring 2019
- ◇ Participant, *College's 3MT competition*, organized by College of Engineering, Architecture & Technology, Oklahoma State University, October 15, 2018
- ◇ Participant, *Scholarship of Teaching and Learning* for Graduate Teaching Assistants, August 30-October 13, 2018
- ◇ Speaker, conducted a workshop "*Introduction to Python*", sponsored by INFORMS at Oklahoma State University Student Chapter, November 17, 2017
- ◇ Participant, *INFORMS Annual Meeting*, Houston, Texas October 22-25, 2017
- ◇ Speaker, Conducted a workshop "*Programming with Python: Hands-On Introduction*", sponsored by INFORMS at Oklahoma State University Student Chapter, April 7, 2017
- ◇ Participant, *College's 3MT competition*, organized by College of Engineering, Architecture & Technology, Oklahoma State University, February 18, 2016

Professional Memberships

- ◇ Institute for Operations Research and the Management Sciences (INFORMS) (June 2016–Present)
- ◇ Decision Sciences Institute (DSI) (September 2019–September 2022)
- ◇ Institute of Industrial and Systems Engineers (IISE) (September 2015–January 2021)
- ◇ Alpha Pi Mu (August 2016–Present)
- ◇ Toastmaster International (April 2016–June 2019)

Computer Skills

- ◇ **Programming:** Python, C++, Objective-C
- ◇ **Data Analytics:** R, SQL
- ◇ **Optimization:** Gurobi, FICO Xpress, MATLAB
- ◇ **Others**: High Performance Computing on Linux