

# Jaeyoung “Jae” Park

528 W Livingston St DPAC 402O, Orlando, FL 32801  
352-215-8259 (phone) jaeyoung.park@ucf.edu (email)

## Professional Employments

**Assistant Professor**, School of Global Health Management and Informatics (Jun 2024-Current)  
University of Central Florida, Orlando, FL

**Postdoc Training**, Healthcare Initiative (Aug 2022-Jun 2024)  
University of Chicago Booth School of Business, Chicago, IL  
Advisors: Drs. Dan Adelman and Veronika Rockova

## Education

**Ph.D., Industrial and Systems Eng.**, minor in Statistics (2022)  
University of Florida, Gainesville, FL  
Dissertation: “Advanced Statistical and Machine Learning Algorithms for Patient-Centric Care Delivery”  
Advisor: Dr. Xiang Zhong

**M.S., Industrial Eng.**, Hongik University, Seoul, Korea (2018)  
Thesis: “Music Recommendation Using Deep Learning”

**B.S., Industrial Eng.**, minor in Computer Eng., Hongik University, Seoul, Korea (2016)

## Research Interests

Machine learning with the application in healthcare to improve care quality and healthcare operations  
Methodologies —Causal inference, Missing outcomes, Predictive modeling  
Applications —Healthcare equity, Telehealth, Orthopedics, Cardiology, Physician burnout

## Publications

### Journal Papers

- J1. **Park J**, Zhong X, Miley E, Rutledge RS, Kakalecik J, Johnson MC, Gray CF, “Machine Learning-Based Predictive Models for 90-Day Readmission of Total Joint Arthroplasty Using Comprehensive Electronic Health Records and Patient-Reported Outcomes,” *Arthroplasty Today*, 2024 (Feb 1). doi.org/10.1016/j.artd.2023.101308. [link]
- J2. **Park J**, Zhong X, Miley E, Gray CF, “Preoperative Prediction and Risk Factor Identification of Hospital Length of Stay for Total Joint Arthroplasty Patients Using Machine Learning,” *Arthroplasty Today*, 2023 (Aug 1). doi:10.1016/j.artd.2023.101166. [link]
- J3. Zhong X, Babaie Sarijaloo F, Prakash A, **Park J**, et al. “A Multidisciplinary Approach to the Development of Digital Twin Models of Critical Care Delivery in Intensive Care Units,” *International Journal of Production Research*, 2022 (Feb 10). doi:10.1080/00207543.2021.2022235. [link]
- J4. **Park J**, Zhong X, Babaie Sarijaloo F, Wokhlu A. “Tailored Risk Assessment of 90-Day Acute Heart Failure Readmission or All-Cause Death to Heart Failure with Preserved vs. Reduced Ejection Fraction,” *Clinical Cardiology*, 2022 (Jan 25);1-9. doi:10.1002/clc.23780. [link]

- J5. **Park J**, Zhong X, Yue D, et al. "Investigating the Cognitive Capacity Constraints of an ICU Care Team Using a Systems Engineering Approach," *BMC Anesthesiology*, 2022 (Jan 4);22(1):1-3. doi:10.1186/s12871-021-01548-7. [link]
- J6. **Park J**, Liang M, Alpert JM, Brown RF, Zhong X. "The Causal Relationship Between Portal Usage and Self-Efficacious Health Information-Seeking Behaviors: Secondary Analysis of the Health Information National Trends Survey Data," *Journal of Medical Internet Research*, 2021 (Jan 27);23(1):e17782. doi:10.2196/17782. [link]
- J7. Sarijaloo Babaie F, **Park J**, Zhong X, Wokhlu A. "Predicting 90 Day Acute Heart Failure Readmission and Death Using Machine Learning-Supported Decision Analysis." *Clinical Cardiology*. 2020 (Dec 23);44:230– 237. doi:10.1002/clc.23532. [link]
- J8. Zhong X, **Park J**, Liang M, et al. "Characteristics of Patients Using Different Patient Portal Functions and the Impact on Primary Care Service Utilization and Appointment Adherence," *Journal of Medical Internet Research*, 2020 (Feb 25);22(2):e14410. doi:10.2196/14410. [link]

#### Under Review

- J9. De Azevedo Daruge M, Zhu J, **Park J**, Hines R, Lee E, "Comparison of health-related quality of life trajectories in older breast cancer survivors and noncancerous controls over ten years: A SEER-MHOS analysis," under review with *Supportive Care in Cancer*, 2024.
- J10. **Park J**, Zhong X, Miley E, Gray CF, "Preoperatively Predicting Achieving the Minimum Clinically Important Differences in Patient-Reported Outcome Measures for Total Hip Arthroplasty Patients Using Machine Learning," under review with *BMC Musculoskeletal Disorders*, 2024. [link]
- J11. **Park J**, Guo S, Liang M, Zhong X, "Investigation of the Relationship Between Patient Portal Utilization and Patient Outcomes Among Cancer Patients: Secondary Analysis of the Health Information National Trends Survey Data," under review with *BMC Medical Informatics and Decision Making* (first revision), 2024.
- J12. **Park J**, Liang M, Zhao Y, Zhong X, "Efficient Surrogate-Assisted Inference for Patient-Reported Outcome Measures with Complex Missing Mechanism," under review with *Electronic Journal of Statistics* (second revision), 2022, arXiv:2210.09362. [link]
- J13. Liang M, **Park J**, Lu Q, Zhong X. "Robust and Flexible Learning of a High-Dimensional Classification Rule Using Auxiliary Outcomes," under review with *Biometrics* (accepted), 2020, arXiv:2011.05493. [link]

#### Working Papers

- J14. **Park J**, Miley E, Zhong X, Gray CF, "Preoperatively Predicting Failure to Achieve the Minimum Clinically Important Difference and Substantial Clinical Benefit for Total Knee Arthroplasty Patients using Machine Learning," 2024.
- J15. **Park J**, Ran J, Shah S, Adelman D, "Causal Effects of Telehealth Follow-Up Visits on 90-Day Postdischarge Unplanned Readmission for Heart Failure Patients," 2024.
- J16. **Park J**, Barganz B, Asare G, Adelman D, "Effectiveness of the Rural Health Care Program on Telehealth Usage of Rural Health Clinics," 2024.

## Conference and Poster Presentations

(\* denotes presenter)

**Park J\***, Li J, Rockova V, Speigel T, Adelman D, "Introducing Healthcare Delivery Equity: A Novel, Actionable Metric Providing Hospitals with Controllable Suggestions for Improvement," *INFORMS Annual Meeting*, Seattle, WA, Oct 2024.

**Park J\***, Adelman D, "Evaluation of the Federal Communications Commission Rural Health Care Program's Impacts on Healthcare Connectivity in Medically Underserved Areas," *Healthcare Initiatives Brown Bag Seminar Series*, Chicago, IL, Apr 2024.

- Park J\***, Adelman D, “Evaluation of the Federal Communications Commission Rural Health Care Program’s Impacts on Broadband Infrastructures and Telehealth Utilization in Rural Health Clinics,” *AMIA Informatics Summit*, Boston, MA, Mar 2024.
- Park J\***, Ran J, Shah S, Adelman D, “Causal Effects of Telehealth Follow-up Visits on Postdischarge Adverse Events,” *INFORMS Annual Meeting*, Phoenix, AZ, Oct 2023.
- Park J\***, Liang M, Zhao Y, Zhong X. “Efficient Surrogate Assisted Inference for Patient-Reported Outcome with Complex Missing Mechanism,” *IEEE CASE*, Mexico City, Mexico, Aug 2022.
- Park J\***, Liang M, Zhong X. “Inference of Deviance-Based Approximation under Complex Missing Mechanism with Informative Surrogate Outcomes,” *IISE Annual Meeting*, Seattle, WA, May 2022.
- Park J\***, Liang M, Zhao Y, Zhong X. “Efficient Surrogate Assisted Inference for Patient-Reported Outcome with Complex Missing Mechanism,” *Fred Hutchinson Cancer Research Center*, Seattle, WA, Apr 2022.
- Park J\***, Liang M, Zhao Y, Zhong X. “Efficient Surrogate Assisted Inference for Patient-Reported Outcome with Complex Missing Mechanism,” *HiPerGator Symposium*, Gainesville, FL, Mar 2022.
- Park J\***, Zhong X, Yue D, et al. “Examining the Association Between ICU Operational Conditions and Clinical Decision-Making,” *Critical Care Congress*, San Juan, PR, Feb 2022.
- Liang M, **Park J\***, Zhong X. “Can a Joint Model Assist Target Label Prediction? Conditions and Approaches,” *INFORMS Annual Meeting*, Anaheim, CA, Oct 2021.
- Park J\***, Liang M, Zhong X. “Can a Joint Model Assist Target Label Prediction? Conditions and Approaches,” *INFORMS QSR Best Poster Competition*, Anaheim, CA, Oct 2021.
- Babaie Sarijaloo F\*, Prakash A, **Park J**, et al., “A Hybrid Simulation Model to Analyze Care Team Workflow and Data Generation in Intensive Care Unit,” *INFORMS Annual Meeting*, Anaheim, CA, Oct 2021.
- Park J**, Babaie Sarijaloo F, Canha C, et al. “A High-Performance Machine Learning Model to Predict 90-Day Acute Heart Failure Readmission and Death in Heart Failure with Preserved Ejection Fraction,” *American College of Cardiology*, Atlanta, GA, May 2021. [link]
- Park J**, Babaie Sarijaloo F, Zhong X, Wokhlu, A\*. “The Additive Value of Echocardiography in Machine Learning Prediction of 90 Day Heart Failure Readmission or Death,” *American Society of Echocardiography*, Virtual conference, Aug 2020.
- Liang M, Zhong X, **Park J\***. “Robust Learning of a High Dimensional Classification Rule Using Auxiliary Outcomes: a Transfer Learning Approach,” *INFORMS Annual Meeting*, Virtual conference, Nov 2020.
- Prakash A, **Park J**, Soleimani J, et al. “System Engineering Framework and Simulation for Diagnostic Error in a Hospital Setting,” *The Diagnostic Error in Medicine 12th Annual International Conference*, Washington, D.C., Nov 2019.
- Zhong X, **Park J\***, Liang M, et al. “A Causal Analysis of Patient Portal and its impact on Primary Care Service Utilization and Appointment Adherence,” *INFORMS Annual Meeting*, Seattle, WA, Oct 2019.
- Park J\***, Zhong X. “On the Effect of Electronic Patient Portal on Primary Care Delivery,” *6th International Conference On Computational Biomedicine*, Gainesville, FL, Feb 2019.
- Park J\***, Nam S, Jhee W. “Music Recommendation Using Deep Learning,” *Korean Intelligent Information System Society*, Seoul, Korea, Jun 2018.

## Teaching and Mentoring Experiences

**Instructor**, University of Central Florida, Orlando, FL  
*HSA5198 - Health Care Decision Sciences and Knowledge Management* (Spring 2025)  
*HSA6911 - Scientific Inquiry Health Professions* (Fall 2024)

**Instructor**, University of Florida, Gainesville, FL  
*ESI4357 - Web-Based Decision Support System* (Summer 2020)

**Teaching Assistant**, University of Chicago, Chicago, IL  
*BUSN40721 - Healthcare Analytics Lab* (Winter 2024)  
*BUSN40912 - Healthcare Data for Researchers* (Spring 2023)

**Teaching Assistant**, University of Florida, Gainesville, FL  
*ESI6323 - Model for Supply Chain Management* for the Outreach Engineering Management Master's Program (Summer 2021)  
*ESI4357 - Web-Based Decision Support System* (Spring 2020)  
*ESI4353 - Operations Research 2* (Fall 2019)  
*EIN4343 - Inventory and Supply Chain Systems* (Spring 2019)  
*ESI6314 - Deterministic Methods in Operations Research* (Fall 2018)

**Teaching Assistant**, Hongik Universtiy, Seoul, Korea  
*Introduction to Data Mining* (Fall 2016, 2017)  
*Web Programming* (Spring 2016)

**Student Mentoring**, University of Central Florida, Orlando, FL

- Chaitanya Annamreddi (medical student, Fall 2024-Current)  
 Research —associations between power outage and healthcare utilization
- Joseph Zourob (medical student, Fall 2024-Current)  
 Research —racial disparity in emergency department

**Student Mentoring**, University of Chicago, Chicago, IL

- Gregory Asare (undergraduate student, Fall 2022)  
 Research —causal effects of the Rural Health Care Program using CMS claims data

**Student Mentoring**, University of Florida, Gainesville, FL

- Emma Noelle Mastro (undergraduate student, Spring 2022)  
 Research —prediction model for hospital readmission of heart failure using the OneFlorida state-wide data
- Leonardo Guerra (undergraduate student, Spring 2022)  
 Research —prediction model for hospital readmission of heart failure using the OneFlorida state-wide data
- Mateo Canarte-Toro (undergraduate student, 2019-2020)  
 Research —prediction model for hospital readmission of congestive heart failure
- Carlos Vega (undergraduate student, 2018-2019)  
 Research —causal structure using patients' survey data

## Awards and Honors

CCIE Research Fellow (Fall 2024-Spring 2025)  
 Finalist for the 2022 IISE DAIS Best Track Paper Competition (Spring 2022)  
 Finalist for the 2022 IISE DAIS Track Data Analytics Competition (Spring 2022)  
 Linda Parker Hudson Fellowship from the Department of Industrial and Systems Engineering at the University of Florida (Spring 2022)  
 STAR Research Achievement Award from the Society of Critical Care Medicine (Spring 2022)  
 Chun Korean Scholastic Excellence Fund from the Herbert Wertheim College of Engineering at the University of Florida (Fall 2021)  
 Academic Scholarship from Chung-Soo Scholarship Foundation (2014-2015)  
 Academic Scholarship from Samsung Electronics (Fall 2014)

## Professional Activities

### Memberships

- Institute for Operations Research and Management Sciences (INFORMS)
  - Health Applications Society (HAS)
- American Medical Informatics Association (AMIA)

### Services

- CCIE International Committee (Fall 2024-Current)
- President, *UF INFORMS Student Chapter* (Fall 2021-Spring 2022)
- Reviewer, *AMIA, AStats, Clinical Cardiology, Health Care Management Science, IEEE Robotics and Automation, IEEE Transactions on Automation Science and Engineering, Networks and Spatial Economics*