Samuel N. Koscelny

Curriculum Vitae

Department of Industrial Engineering
Clemson University
(+1) (918)-978-3679
skoscel@g.clemson.edu
Linkedin

Education

2024–present **PhD, Industrial Engineering**, *Clemson University*, Clemson, South Carolina.
Advisor: Dr. David Neyens

2023–2024 **M.S., Industrial Engineering**, *Clemson University*, Clemson, South Carolina | GPA: 4.00/4.00.
Advisor: Dr. David Neyens
Thesis: Exploring Healthcare Chatbot Information Presentation: Applying Hierarchical Bayesian Regression and Inductive Thematic Analysis in a Mixed Methods Study

2018–2022 **B.S., Industrial Engineering**, *Oklahoma State University*, Stillwater, Oklahoma | GPA: 3.93/4.00.
Advisor: Dr. Katherina Jurewicz
Minors: Data Analytics & Spanish

Research Experience

Clemson University, Clemson, South Carolina

Jan. 2023– present ***Big Data Analytics to Advance Understanding of Pediatric Mental and Behavioral Healthcare***.
Leverage human-centered data and advanced statistical models in R to identify key factors in pediatric mental and behavioral health emergency visits, improving care efficiency and patient outcomes in emergency departments

Investigating Human-AI Interaction: Bayesian Statistics and Thematic Analysis Approaches.
Utilized Bayesian hierarchical regression and inductive thematic analysis to evaluate user interactions with healthcare chatbots, assessing effectiveness and exploring the psychological constructs that shape user engagement with AI-driven healthcare systems.

Advisor : **Dr. David Neyens**, *Associate Professor, Department of Industrial Engineering* ,(*Personal Web-page*)

May 2023– Feb. 2024 ***Usability Study of Routine Management App for Neurodivergent University Students***.
Led usability testing and thematic analysis for a routine management app in collaboration with an external startup, interviewing neurodivergent university students to gather insights and develop key themes on user interaction and task management.

PI : **Dr. Emma Dixon**, *Assistant Professor, Department of Human-Centered Computing*,(*Personal Web-page*)

Oklahoma State University, Stillwater, Oklahoma

Jan. 2021– May 2022 ***Exploring Linguistic Differences in Intuitive Gesture Elicitation for 3D Gestural Systems***.
Investigated how primary verbal language influences intuitive gesture selection in 3D systems, revealing cultural and linguistic differences across English, Mandarin, and Spanish speakers, with a focus on gesture mappings and reaction times in human-computer interaction.

Advisor : **Dr. Katherina Jurewicz**, *Assistant Professor, Department of Industrial Engineering & Management*,(*Personal Web-page*)

Jan. 2022– May 2022 ***Encoder-Transformer Neural Network for Video-Based Gesture Action Recognition***. Designed an Encoder-Transformer model for video-based gesture recognition using the Continuous Gesture Dataset (ConGD), focusing on a video encoder to map inputs into continuous representations for nonverbal language recognition in computer vision.

PI : **Dr. Sathyanarayanan Aakur**, *Assistant Professor, Department of Computer Science*,(*Personal Web-page*)

Publications

Journal Papers Under Review (Submitted)

1. **Koscelny, S.N.**, S. Sadralashrafi, D.M. Neyens (Submitted, 2024). The Danger in Easy Answers: Conceptualizing Processing Fluency Bias for Healthcare Chatbot Information Presentation in an Inductive Thematic Analysis of User Experience and Perceptions **(Submitted to Computers in Human Behavior)*.
2. **Koscelny, S.N.**, D.M. Neyens, F. Zeinali, K. Taaffe, A.M. Dietrich, A. Joseph (Submitted, 2024). Factors Impacting the Time to Disposition for Pediatric Mental and Behavioral Health Emergency Department Visits **(Submitted to International Journal of Biomedical Informatics)*.
3. **Koscelny, S.N.**, M.T. Nare, K.A. Jurewicz (Submitted, 2024). Put Your Gestures Where Your Mouth Is – Exploring the Effect of Primary Verbal Language on Intuitive Gesture Elicitation in 3D Gestural Recognition Systems **(Submitted to International Journal of Human-Computer Interaction)*.
4. **Koscelny, S.N.**, S. Sadralashrafi, D.M. Neyens (Submitted, 2024). Generative AI Responses are a Dime a Dozen; Making Them Count is the Challenge – Evaluating Information Presentation Styles in Healthcare Chatbots Using Hierarchical Bayesian Regression Models **(Submitted to Applied Ergonomics)*.
5. **Koscelny, S.N.**, D.M. Neyens, A.M. Dietrich, D. Stewart, V.G. Parker, A. Joseph (Submitted, 2024). Emergency Department Visits for Children Identified as at Risk of Mental and Behavioral Conditions in the United States: An Analysis of the 2019 NHIS Data **(Submitted to BMC Health Services)*.

Journal Papers in Development

6. Gilman, E., **S.N. Koscelny**, Dixon, E. (In preparation). Working Towards Success in an Unsupportive Environment: Investigating Routine Management Systems to Empower Autistic University Students. Planned for submission to *ACM Designing Interactive Systems Conference (DIS) 2025*
7. Soman, D., **S.N. Koscelny**, Taaffe, K., Neyens, D., Allison, D., Dietrich, A., Joseph, A. (In preparation). Using Patient Journey Mapping and Provider Workflows to Understand Process Barriers to Pediatric Mental and Behavioral Health Care in Emergency Departments. Planned for submission to *Human Factors*.
8. **S.N. Koscelny**, F. Zeinali, D.M. Neyens, K. Taaffe, A.M. Dietrich, A. Joseph (In preparation). Systematic Review of Built Environment Interventions in Emergency Departments and Their Impact on Mental and Behavioral Health Outcomes for Pediatric Patients. Planned for submission to *Health Environments Research & Design Journal (HERD)*.
9. **S.N. Koscelny**, D.M. Neyens, F. Zeinali, K. Taaffe, A.M. Dietrich, A. Joseph (In preparation). Predicting Recidivism Risk in Mental and Behavioral Health Patients: A Big Data Approach Using ICD-10 Classifications. Planned for submission to *Journal of the American Medical Informatics Association (JAMIA)*.
10. **S.N. Koscelny**, D.M. Neyens, F. Zeinali, K. Taaffe, A.M. Dietrich, A. Joseph (In preparation). Time Series Analysis of ED Intervention for Mental and Behavioral Health Pediatric Patients. Planned for submission to *Annals of Emergency Medicine*.

Conference Papers

Published Conference Proceedings

1. **Koscelny, S. N.**, & D.M. Neyens (2024). The Effect of Healthcare Chatbots' Information Presentation Styles on User Acceptance in a Knowledge Seeking Task. Proceedings of the 2024 Human Factors and Ergonomics Society Annual Meeting. *(Sue Bogner Student Paper Award, Third Place)*.

Conference Papers in Preparation

2. Zeinali F., **S.N. Koscelny**, K. Taaffe, D.M. Neyens, A. Joseph. A.M. Dietrich. Evaluating Patient Care Pathways in the Emergency Department and Their Impact on Pediatric Mental and Behavioral Health Outcomes. Planned for submission to *2025 Healthcare Systems Process Improvement Conference.*
3. **S.N. Koscelny**, Rucker II, R., Reed, M., Neyens, D., Duchowski, A.T. (In preparation). The Impact of Healthcare Chatbots' Communication Style on User Eye Gaze Behavior. Planned for submission to *ACM Symposium on Eye Tracking Research & Applications (ETRA).*

Posters and Presentations

Poster Presentations

1. **Koscelny, S.N.**, Sadralashrafi, S., Neyens, D.M. (2024). Conceptualizing Processing Fluency Bias in Healthcare Chatbot Information Presentation: An Inductive Thematic Analysis of User Experience and Perceptions. Poster presented at Clemson University, Department of Industrial Engineering.
2. **Koscelny, S.N.**, Neyens, D.M. (2024). Factors Impacting the Time to Disposition for Pediatric Mental and Behavioral Health Emergency Department Visits. Poster presented at Clemson University, Department of Industrial Engineering.
3. **Koscelny, S.N.**, Nare, M.T., Dowers, K., Jurewicz, K.A. (2022). Exploring the Capabilities of Input and Output Modalities for Natural User Interfaces Used in Human-Computer Interaction. Poster presented at the 2022 Institute of Industrial and Systems Engineering Annual Conference, Seattle, Washington, May 2022.

Conference Presentations

4. **Koscelny, S.N.**, Jurewicz, K.A. (2022). Investigating the Effect of Primary Verbal Language on Intuitive Gesture Interaction in 3D Gesture Recognition Systems. Presented at the 2022 Institute of Industrial and Systems Engineering Annual Conference, Seattle, Washington, May 2022.
5. **Koscelny, S.N.**, Dowers, K. Chenang L. (2022). Stroke Prediction Using Machine Learning and Its Importance in Healthcare Systems. Presented at the Technical Paper Competition, 2022 Institute of Industrial and Systems Engineering South Central Regional Conference, Stillwater, Oklahoma, February 2022 *(Awarded Third Place)*.

Professional Service

1. **Reviewer,** 2025 International Symposium on Human Factors and Ergonomics in Health Care.

Awards & Scholarships

Oct. 2024 **IE Travel Grant**, ($1,700), Department of Industrial Engineering, Clemson University

- Funded travel to attend the 2024 HFES ASPIRE Conference.

Sept. 2024 **Sue Bogner Best Student Paper Award, Third Place** ($100), HFES

- Awarded for conference proceedings paper at the 2024 HFES ASPIRE Conference.

May 2022 **James W. Barany Award, First Place**, Institute of Industrial and Systems Engineers (IISE)

- National award for academic excellence and leadership in industrial engineering, granted by the IISE Council of IE Academic Department Heads. Nominated by the OSU IE Department Chair.

April 2022 **Industrial Engineering Outstanding Senior Award**, Oklahoma State University

- Recognized as the top graduating senior in the industrial engineering department for academic excellence and leadership.

April 2022 **Saint Patrick's Award** ($1,000), Oklahoma State University

- University award honoring top graduating senior students for their leadership, academic achievements, and contributions to the community.

March 2022 **Bailey Family Memorial Scholarship** ($11,000), Oklahoma State University

- Awarded to study abroad in Valencia, Spain, during Fall 2022.

March 2022 **Don and Cathey Humphreys' Scholarship** ($3,000), Oklahoma State University

- Awarded to support study abroad in Valencia, Spain, during Fall 2022.

Feb. 2022 **Third Place in Technical Paper Competition** ($400), IISE South Central Regional Conference

- Awarded for a technical paper on stroke prediction using machine learning, presented at the IISE South Central Regional Conference.

Teaching & Leadership Experience

Clemson University, Clemson, SC

August 2024 – Present **Interdepartmental Liaison, Human Factors and Ergonomics Society (HFES)**.

- Established a mentorship program to support students across various departments.
- Facilitate communication between departments to promote and coordinate HFES activities and events.

Oklahoma State University, Stillwater, OK

May 2021 – May 2022 **President, Institute of Industrial and Systems Engineers (IISE)**.

- Led planning of the 2022 IISE South Central Regional Conference, generating a profit of $9,545.
- Established a mentorship program for underclassmen.
- Organized events for students to network within the Industrial Engineering department.

May 2021 – May 2022 **Treasurer, Alpha Pi Mu**.

- Promoted academic excellence in the industrial engineering department through the nationwide honor society.
- Organized initiation ceremonies for new members.

Aug. 2021 – May 2022 **Volunteer STEM Mentor**.

- Mentored two sophomore IE students through the IISE mentorship program.
- Provided guidance on succeeding in classes, internships, and research.

Aug. 2020 – May 2021 **Student Learning Assistant (SLA)**.

- Led weekly learning sessions in Python, assisting students in the largest class on campus.
- Offered one-on-one help sessions for assignments and troubleshooting Python code.

May 2019 – May 2020 **Director of Cowboy Cousins, Student Government Association**.

- Organized events to promote diversity and inclusion for international students.
- Established a mentor program to help international students learn about American culture.
- Served on the executive cabinet of the Student Government Association, representing the student body.

May 2019 – May 2020 **Treasurer, Spanish Club**.
- Collected dues and promoted the Spanish Club at university events.
- Organized weekly Tertulia events for members to practice speaking Spanish.

Sept. 2018 – May 2019 **Multicultural Affairs Committee (MAC)**.
- Selected as an FRC intern, engaged in allocating funds to student organizations to promote diversity.

Aug. 2018 – May 2019 **Freshmen Representative Council, Student Government Association**.
- Selected as one of the top 50 freshmen to represent the freshman student body.
- Planned campus-wide activities for community service, philanthropy, and social events.

Volunteer Service

Clemson University, Clemson, South Carolina

Nov. 2024 **Volunteer,** Día de los Muertos (Day of the Dead) Volunteer Team.

Oct. 2023 **Volunteer,** 2023 Bank of America Fall for Greenville Festival.

April 2022 **Musician,** Hispanic Student Association.

April 2022 **Musician,** College of Engineering, Architecture, and Technology (CEAT).

2018–2022 **Volunteer,** Into the Streets.

April 2019 **Musician,** The Wells Project.

Spring 2019 **Volunteer,** Cleats for Kids.

April 2019 **Musician,** Freshman Representative Council (FRC).

Oct. 2018 **Musician,** Mental Health Association Oklahoma.

Certifications

Feb. 2020 **IISE Certified Lean Green Belt**

March 2019 **IISE Certified Six Sigma Green Belt**

Skills & Experiences

Programming (Advanced) Python, R

Programming (Proficient) Java, LaTex, SQL, HTML, CSS, JavaScript

Software/Tools PsychoPy, JMP, Lightroom, Photoshop

Second Languages Fluent in Spanish

Referees

Dr. David Neyens
Associate Professor, Department of Industrial Engineering
Clemson University
✉ dneyens@clemson.edu

Dr. Katherina Jurewicz
Assistant Professor, Department of Industrial Engineering & Management
Oklahoma State University
✉ katie.jurewicz@okstate.edu

Dr. Emma Dixon
Assistant Professor
School of Computing
Clemson University
✉ eschare@g.clemson.edu