

EDUCATION

- 2020 – Present **PhD. in Industrial & Systems Engineering**
Gallogly College of Engineering at the *University of Oklahoma*
- Advisor: Dr. Ziho Kang
 - Focus: Human Factors & Ergonomics, Neuroergonomics, Data Visualization, Machine Learning, Data Mining.
- 2018 – 2020 **MSc. in Industrial & Systems Engineering**
Gallogly College of Engineering at the *University of Oklahoma* GPA: 4.00
- Thesis: Multimodal Neuroergonomic Approaches to Human Behavior & Cognitive Workload in Complex High-Risk Semantically Rich Environments: A Case Study of Local & En-Route Air Traffic Controllers.
- 2013 – 2018 **BSc. in Industrial & Systems Engineering with Distinction**
Gallogly College of Engineering at the *University of Oklahoma* GPA: 3.71
- Capstone - *Baker Hughes & General Electric*: Simulation Analysis of the Thrust Chamber Assembly Area for Redesign and Transport.

RESEARCH EXPERIENCE

- 2018 – Present **Human Factors & Simulation Laboratory**
Graduate Research Assistant
Under the supervision of Dr. Ziho Kang, Industrial & Systems Engineering
- 2017 – 2018 **Human Factors & Simulation Laboratory**
Undergraduate Research Assistant
Under the supervision of Dr. Ziho Kang, Industrial & Systems Engineering
- Created computational algorithms to process raw eye tracking data into representative AOI-network visualizations.
 - Carried out a quantitative and qualitative retrospective protocol analysis of verbal data collected from expert air traffic controllers.
 - Applied a multi-modal approach (eye tracking and fNIRS) to explore the cognitive workload of veteran local air traffic controllers.
 - Adapted training materials of candidate air traffic controllers to their learning style using Universal Design for Learning theories.
 - Collected eye-tracking and interview data from 14 expert Air Traffic Controllers alongside the FAA in Minneapolis, Denver, Oklahoma City, and Orlando International Airports.
- 2016 – 2017 **Human Memory & Learning Laboratory**
Undergraduate Research Assistant
Under the supervision of Dr. Daniel Kimball, Psychology
- Involved in the experimental design and data collection procedures of two projects regarding adaptive learning & expertise.

PROFESSIONAL EXPERIENCE

- 2020 – Present **Second Wind Coffeehouse**
Board member
A student-led non-profit organization based in *Norman, Oklahoma*
- 2019 – 2020 **Second Wind Coffeehouse**
Co-director
A student-led non-profit organization based in *Norman, Oklahoma*
- 2017 – 2019 **Second Wind Coffeehouse**
Volunteer
A student-led non-profit organization based in *Norman, Oklahoma*
- 2017 – 2018 **Luggage With Love**
Supply Chain & Logistics Intern
A non-profit organization supporting foster children in *Oklahoma*
- Re-designed the point-of-sale system to collect consumer behavioral data and key performance indicators for products.
 - Improved inventory management system efficiency by 30% through the development of forecasting models to predict biweekly demand.
 - Achieved financial self-sufficiency of a Pay-What-You-Can revenue management system through waste-reducing Lean Six Sigma methodologies.
 - Improved the reliability of inventory management system by 20% through the implementation of data collection, tracking and processing procedures of new inventory.
 - Developed a descriptive statistical analysis of multivariable historical data to identify key performance indicators based on targeted consumer groups.

TEACHING EXPERIENCE

Fall - 2019, 2020 Teaching Assistant	Systems Analysis using Simulation (ISE 4663 & ISE 5663) Industrial & Systems Engineering 60 students
	<ul style="list-style-type: none">• Taught biweekly labs on several topics: stochastic simulation theories, terminal vs steady state systems, queuing theory, statistical analysis of performance measures, simulation modeling in ARENA.• Graded quizzes, exams, labs, and held office hours.
Fall - 2015, 2016 Peer Educator	Gateway: Academic Success (UCOL 1002) University College 25 students
	<ul style="list-style-type: none">• Engaged with recently admitted students to the University by engaging in topics such as: library use, time management, essential academic skills (critical reading, writing, listening as well as test taking), campus policies, campus resources, and career education.
Spring - 2016, 2017 Peer Educator	Gateway: Strategies for Success (UCOL 2002) University College 25 students
	<ul style="list-style-type: none">• Mentored students placed in academic probation, notice, or who need academic assistance. Taught several lessons emphasizing: study skills, time management, motivation, and goal setting.
Summer - 2016, 2017 Peer Educator	Do You Understand Integrity? (UNIV 1000) Integrity Council 10 students
	<ul style="list-style-type: none">• Worked with students that engaged in academic misconduct. The course focuses on understanding integrity at the University and how the principles of integrity extend into our lives.

TECHNICAL SKILLS

Programming languages	Proficient in R; good working knowledge of Python & Matlab.
Databases & data	SQL (MySQL), R (dplyr, tidyr), Python (pandas, numpy)
Data visualization	R (ggplot2), Python (matplotlib, seaborn)
Machine learning	R (caret, tidyverse, forecast), Python (scikit-learn, Gurobi)
Speciality	Tobii Pro Lab & Studio, ARENA, L ^A T _E X, Alexa Skills Kit, HTML, Git
Certifications	Lean Six Sigma Greenbelt, Engineer-in-Training (<i>Oklahoma</i>)

HONORS & PROFESSIONAL ORGANIZATIONS

Awards	Commendation from the Governor of <i>Oklahoma</i> First Place - Amazon's Alexa Hackathon at the <i>University of Oklahoma</i> Best Student Presentation at the FAA's COE TTHP Dean's Honor Roll President's Honor Roll International Student of the Month for the Norman Lions' Club	(2017) (2017) (2018, 2019) (2015, 2016, 2017, 2018) (2016, 2018) (2014)
Fellowships & scholarships	PhD. Recruitment Excellence Fellowship Industrial & Systems Engineering Advisory Board Scholarship Cleo Cross Scholarship JMA Solutions Scholarship George T. Gibson Industrial Systems Engineering Scholarship	(2020) (2018, 2020) (2020) (2018) (2015)
Organizations	Member of the Human Factors & Ergonomics Society (HFES) HFES Chapter Vice-president at the <i>University of Oklahoma</i> Member of the Integrity Council at the <i>University of Oklahoma</i>	(2020 - Present) (2020 - Present) (2016 - 2018)

PUBLICATIONS & PRESENTATIONS

- Conference proceedings **Palma Fraga, R.**, Reddy, Y. P., Kang, Z., Izzetoglu, K. (2020). Multimodal analysis using neuroimaging and eye movements to assess cognitive workload. In Proceedings of the 22nd International Conference on Human-Computer Interaction, Jul. 19-24, Copenhagen, Denmark.
- Palma Fraga, R.**, Kang, Z. and Mandal, S. (2018). Characterization of air traffic controllers' visual search patterns and control strategies. In Proceedings of the 2018 ICSTEM, The International Society for Engineers and Researchers, Jun. 18-19, Seoul, S. Korea.
- Technical reports Kang, Z., Shehab, R. L., Ding, L., Yuan, H., **Palma Fraga, R.**, Yeagle, L. N., Alhashim, A., Plata, M. R., Dragoo, M. R. (2019). Universal design for learning and multimodal training. pp. 1-177. Federal Aviation Administration.
- Kang, Z., Dyer, J. W., West, S. G., **Palma Fraga, R.**, Mandal, S., Egwu, K. and McClung, S. N. (2018). Characterization and application of air traffic controllers' visual search patterns and control strategies for efficient and effective training. pp. 1- 282. Federal Aviation Administration.
- Poster presentations Kang, Z., Shehab, R. L., Ding, L., Yaun, H., West, S. G., Dragoo, M. R., Yeagle, L. N., **Palma Fraga, R.**, and Rippetoe, J. (2018). Characterization of air traffic controllers' visual search patterns and control strategies (poster exhibition). In Proceedings of the 2018 Interservice/ Industry Training, Simulation and Education Conference (I/ITSEC), Nov. 26-30, Orlando, FL.
- Kang, Z., Shehab, R. L., Ding, L., Yaun, H., West, S. G., Dragoo, M. R., Yeagle, L. N., **Palma Fraga, R.**, and Rippetoe, J. (2018). Adaptive learning pedagogy of Universal Design for Learning (UDL) for multimodal training (poster exhibition). In Proceedings of the 2018 Interservice/ Industry Training, Simulation and Education Conference (I/ITSEC), Nov. 26-30, Orlando, FL.
- Kang, Z., Dyer, J., West, S. G., Mandal, S., **Palma Fraga, R.**, McClung, S., and Egwu, U. K. (2017). Characterization of visual scanning patterns and aircraft control strategies for efficient and effective 6 training. Poster session in Solutions for Operational Aviation Research (SOAR) Q2 meeting, Federal Aviation Administration Center of Excellence, Apr. 3-5, Philadelphia, PA.
- Kang, Z., Shehab, R. L., Ding, L., Yaun, H., West, S. G., Dragoo, M. R., Yeagle, L. N., **Palma Fraga, R.**, and Rippetoe, J. (2017). Universal Design for Learning and Multimodal Training. Poster session in Solutions for Operational Aviation Research (SOAR) Q3 meeting, Federal Aviation Administration Center of Excellence, Apr. 3-5. Philadelphia, PA.
- Kang, Z., Shehab, R. L., Ding, L., Yaun, H., West, S. G., Dragoo, M. R., Yeagle, L. N., **Palma Fraga, R.**, and Rippetoe, J. (2017). Universal Design for Learning and Multimodal Training. Solutions for Operational Aviation Research (SOAR) Q4 meeting, Federal Aviation Administration Center of Excellence, FAA headquarters, Jun. 11-15, Washington D.C.
- Kang, Z., Dyer, J., West, S. G., Mandal, S., **Palma Fraga, R.**, McClung, S., and Egwu, U. K. (2017) Characterization of visual scanning patterns and aircraft control strategies for efficient and effective training. Solutions for Operational Aviation Research (SOAR) Q4 meeting, Federal Aviation Administration Center of Excellence, FAA headquarters, Jun. 11-15, Washington D.C.