

## ZIHO KANG

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### RESEARCH INTERESTS

My research interests fall at the intersection of human factors, human-integrated systems engineering, and human-computer interaction. I develop methodologies and algorithms to analyze human visual scanning patterns to evaluate human performance, to support the modeling of human decision making processes, to inform the design of interfaces, to inform training interventions and to develop novel alerting methods. I have been extending the research to multimodal analyses that consider cognitive analysis of situation awareness and stochastic simulation analysis of human decision making process.

*Key words:* human factors, ergonomics, human-integrated systems engineering, human-computer interaction, eye tracking analytics, decision making, training intervention methods, stochastic simulation.

*Applications:* aerospace/aviation, weather, deep water horizon explorations, training intervention, virtual reality systems.

### EDUCATION

Korea University	Industrial Engineering	B.S.	2001
Purdue University	Industrial Engineering	M.S.	2006
Purdue University	Industrial Engineering	Ph.D.	2012

### PROFESSIONAL APPOINTMENTS

2014-present	Assistant Professor, School of Industrial and Systems Engineering, Affiliated Professor (by courtesy), Department of Psychology, University of Oklahoma, Norman, OK.
2013-2014	Post-doctoral Researcher, College of Computing and Informatics, Drexel University, Philadelphia, PA.
2012-2013	Post-doctoral Research Associate, Department of Systems and Information Engineering, University of Virginia, Charlottesville, VA.
2004-2011	Research Assistant, School of Industrial Engineering, Purdue University, West Lafayette, IN.
2003-2004	Engineer, Research and Development of Trading Systems, Korea Stocks and Futures Exchange, Pusan, South Korea.
2001-2002	Engineer, Research and Development of Enterprise Resource Planning Systems, Samsung Data Systems, Seoul, South Korea.
1997-1999	Honorable discharge as KATUSA Sergeant, Education Center, Camp Humphreys, USASA, AREA III, South Korea.

### AWARDS AND HONORS

Sep 2017	Received <b>Best Presentation Award</b> in <i>Proceedings of the 2nd International Conference on Bio-engineering for Smart Technologies (2017 BioSmart)</i> , Paris, France.
Oct 2016	Received <b>Andrew P. Sage Best Transaction Award</b> from the <i>IEEE Systems, Man, and Cybernetics Society</i> . The award was for the best paper published in the <i>Transactions in Human-Machine Systems</i> .

Jan 2015	Received <b>Junior Faculty Fellowship</b> from the Office of the Vice President for Research at the University of Oklahoma.
Nov 2011	Invited to World Motor Auto Show in Detroit to attend research forum. Received financial support from Hyundai Motor Company.
Apr 2011	Invited to Indianapolis Air Route Traffic Control Center (ARTCC) to perform eye tracking research experiments. Received financial support from Indianapolis ARTCC.
Oct 2010	Invited to Air Traffic Control Association (ATCA) 55th Annual Conference and Exposition at Washington D.C. to perform eye tracking research experiments. Received financial support from ATCA.
Dec 2001	Awarded Best New Recruit at Samsung Data Systems.
May 1999	Awarded U.S. Army Recommendation Medal.
Nov 1998	Received Golden Tiger Decoration from U.S. Army.

### **INVITED PRESENTATIONS AND WEBINARS (Total: 3)**

1. “Data visualization in eye tracking research,” *Tobii Pro Research Spotlight Seminar Series*, Tobii Pro North America, Jun. 1, 2017. (Webinar)
2. “Eye tracking data analysis algorithms and applications,” Research presentation invitation from the Department of Information and Industrial Engineering at Yonsei University, Seoul, S. Korea. Jul. 21, 2015.
3. “Eye tracking analysis methodologies,” Research presentation invitation from Civil Aerospace Medical Institute, Mike Monroney Aeronautical Center, Federal Aviation Administration, OKC, OK. Oct. 10, 2014.

### **PUBLICATIONS**

*Underlined names indicate the students who published papers as my advisees or mentees* (Total: 8).

#### **Peer-reviewed Journal Publications (Total: 12)**

1. Kang, Z., Dragoo, M.R., Yeagle, L.N., Shehab, R.L., Yuan, H., Ding, L., and West, S.G. (2018). Adaptive learning pedagogy of Universal Design for Learning (UDL) for multimodal training. *Journal of Aviation/Aerospace Education and Research*.
2. Wilson, K.A., Heinselman, P.L., and Kang, Z. (2018). Comparing Forecaster Eye Movements during the Warning Decision Process. *Weather and Forecasting*.
3. Argyle, E.M., Gourley, J.J., Ling, C., Shehab, R.L., and Kang, Z. (2017). Effects of display design on signal detection in flash flood forecasting. *International Journal of Human-Computer Studies*, 99, 48-56.
4. Kang, Z., and Kim, K. (2017). Multimodal perception study on virtual 3D curved textures with vision and touch for interactive multimedia systems. *Multimedia Tools and Applications*, 76, 1-15.
5. Kang, Z., Mandal, S., Crutchfield, J., Millan, A., and McClung, S.N. (2016) Designs and algorithms to map eye tracking data with dynamic multielement moving objects. *Computational Intelligence and Neuroscience*, 2016, 1-18. (vol. 2016: Special issue titled Advances in Eye Tracking Technology: Theory, Algorithms, and Applications)
6. Kang, Z. and Morin, T. (2016). Multi-attribute decision making under imperfect information and uncertain outcome of an unfair bidding game. *International Journal of Information Technology & Decision Making*, 15(1), 63-81.
7. McClung, S.N. and Kang, Z. (2016). Characterization of visual scanning patterns in air traffic control. *Computational Intelligence and Neuroscience*, 2016, 19-35. (vol. 2016: Special issue titled Advances in Eye Tracking Technology: Theory, Algorithms, and Applications)
8. Wilson, K.A., Heinselman, P.L., Kuster, C.M., Kingfield, D.M., and Kang, Z. (2016). Forecaster performance and workload: Does radar update time matter? *Weather and Forecasting*, 32, 253-274.

9. Wilson, K.A., Heinselman, P.L., and Kang, Z. (2016). Exploring applications of eye tracking in operational meteorology research. *Bulletin of the American Meteorological Society*, 97(11), 2019-2025.
10. Kang, Z. and Landry, S.J. (2015). An eye movement analysis algorithm for a multi-element target tracking task: Maximum transition-based agglomerative hierarchical clustering. *IEEE Transactions on Human-Machine Systems*, 45(1), 13-24. **Received Andrew P. Sage Best Transactions Paper Award.**
11. Kang, Z. and Landry, S.J. (2014). Using scanpaths as a learning method for a conflict detection task of multiple target tracking. *Human Factors: The Journal of Human Factors and Ergonomics Society*. 56 (1), 1150-1162.
12. Kang, Z. and Landry, S.J. (2014). Top-down approach for a linguistic fuzzy logic model. *Cybernetics and Systems: An International Journal*, 45(1), 39-55.

#### **Peer-reviewed Journal Publications under Review or Revision (Total: 2)**

1. Mandal, S. and Kang, Z. A robust framework of data visualization in eye tracking analysis for a tracking task of multi-element moving targets: A directed network approach. *Journal of Eye Movement Research*.
2. Khamaj, A. and Kang, Z. Usability evaluation of Mobile Weather Hazard Alert Applications. *International Journal of Industrial and Systems Engineering*.

#### **Peer-reviewed Conference Papers (Total: 11)**

1. Kang, Z. (2017). Real time eye movement analysis framework. In *Proceedings of the 2nd International Conference on Bio-engineering for Smart Technologies (2017 BioSmart)*, Aug. 30-Sep. 1, Paris, France. **(Received Best Presentation Award.)**
2. Naeeri, S., and Kang, Z. (2017). Analysis of Pilot's Visual Scanning Characteristics under Normal and Extreme Flight Conditions. In *Proceedings of the 6th Annual World Conference of the Society for Industrial and Systems Engineering*, Herndon, VA. 227-233.
3. Khamaj, A., Shehab, R., and Kang, Z. (2017). Efficiency and distraction evaluations of motorcycles mounted infotainment systems and controls. In *Proceedings of the 6th Annual World Conference of the Society for Industrial and Systems Engineering*, Herndon, VA. 169-175.
4. Yuan, H., Rippetoe, J., Ding, L., Kang, Z., Shehab, R. L., and West, S. G. (2017). Universal Design for Learning in the framework of neuroscience-based education and neuroimaging-based assessment. In *Proceedings of the 2nd International Conference on Bio-engineering for Smart Technologies (2017 BioSmart)*, Aug. 30-Sep. 1, Paris, France.
5. Bowden, K. A., Heinselman, P. L., and Kang, Z. (2016). Eye-tracking applications to assess impacts of phased array radar data on forecasters' cognitive processes. In *Proceedings of the 32nd Conference on Environmental Information Processing Technologies*, American meteorological society, New Orleans, LA. 1-6.
6. Mandal, S., Kang, Z., and Millan, A. (2016). Data visualization of complex eye movements using directed weighted networks: a case study on a multi-element target tracking task. In *Proceedings of the Human Factors and Ergonomics Society 60th Annual Meeting*, Washington D.C., 106-110. **(First author (advisee) received Best Student Paper Award from the Aerospace Technical Group.)**
7. Mandal, S. and Kang, Z. (2015). Eye tracking analysis using different types of Areas of Interest for multi-element moving objects: Results and implications of a pilot study in air traffic control. In *Proceedings of the Human Factors and Ergonomics Society 59th Annual Meeting*, Los Angeles, CA. 1515-1519.
8. Kang, Z. and Bass, E.J. (2014). Supporting the eye tracking analysis of multiple moving targets: Design concept and algorithm. *IEEE International Conference on Systems, Man, and Cybernetics*, San Diego, CA, 3191-3196.
9. Kang, Z., Bass, E.J., and Lee, D.W. (2014). Air traffic controllers' visual scanning, aircraft selection, and comparison strategies in support of conflict detection. In *Proceedings of the 58th Annual Meeting of the Human Factors and Ergonomics Society*, Chicago, IL, 77-81.

10. Kang, Z. and Bass, E. J. (2013). Computationally tractable approaches to modeling the coverage of weather sensor networks, *IEEE International Conference on Systems, Man, and Cybernetics, Manchester, England*, 4905-4912.
11. Kang, Z. and Landry, S. J. (2010). Capturing and analyzing visual groupings of multiple moving targets in an aircraft conflict detection task using eye movements, In *Proceedings of the Human Factors and Ergonomics Society 54th Annual Meeting*, San Francisco, CA, 1906-1910.

**Conference Proceedings, Magazines, Posters, and Other Published Manuscripts Not Critically Reviewed (Total: 12)**

1. Kiran, R., Salehi, S., Jeon, J., and Kang Z. (2018). Enhancing Situation Awareness and Process Safety in Offshore Drilling Operations: Applications of Eye-Tracking System. In *Proceedings of the 50th Annual Offshore Technology Conference*, Apr. 30-May 3. Houston, TX.
2. Kang, Z. and Jeon, J. (2018). Situation awareness assessment through protocol and eye tracking analyses. In *Proceedings of the 2018 Institute of Industrial and Systems Engineers (IISE) Annual Conference*, May 19-22, Orlando, FL.
3. Naeeri, S. M., Kang, Z. (2018). Exploring the relationship between pilot's performance and fatigue when interacting with cockpit interfaces. In *Proceedings of the 2018 Institute of Industrial and Systems Engineers (IISE) Annual Conference*, May 19-22, Orlando, FL.
4. Kang, Z., Dragoo, M.R., Yeagle, L.N., Shehab, R. L., Yuan, H., Ding, L., and West, S. G. (2017). Adaptive learning pedagogy in Universal Design for Learning and multimodal training. In *Proceedings of the 2017 National Training Aircraft Symposium (NTAS)*, Aug. 14-16. Daytona Beach, FL.
5. Kang, Z., Mandal, S., and Dyer, J. (2017). Data visualization approaches in eye tracking to support the learning of air traffic control operations. In *Proceedings of the 2017 National Training Aircraft Symposium (NTAS)*, Aug. 14-16. Daytona Beach, FL.
6. Kang, Z. and Landry S. J. (2017). An eye movement analysis algorithm for a multi-element target tracking task: Maximum transition-based agglomerative hierarchical clustering. *IEEE Systems, Man, and Cybernetics Magazine*, 2, 52-53. (**Extended abstract published for the Andrew P. Sage Best Transactions Paper Award.**)
7. Kang, Z. (2017). Universal Design for Learning and Multimodal Training. Poster session in *Solutions for Operational Aviation Research (SOAR) Q4 meeting*, Federal Aviation Administration Center of Excellence, FAA headquarters, Jun. 11-15, Washington D.C.
8. Kang, Z. (2017). Characterization of visual scanning patterns and aircraft control strategies for efficient and effective training. Poster session in *Solutions for Operational Aviation Research (SOAR) Q4 meeting*, Federal Aviation Administration Center of Excellence, FAA headquarters, Jun. 11-15, Washington D.C.
9. Khamaj, A. and Kang, Z. (2017) Usability evaluation of mobile weather alert applications. *Gallogly College of Engineering Poster Fair*, University of Oklahoma, Nov. 10, Norman, OK.
10. Mandal, S. and Kang, Z. (2017, November) Visualizing eye movement data in dynamic object tracking tasks. *Gallogly College of Engineering Poster Fair*, University of Oklahoma, Nov. 10, Norman, OK.
11. Ybarra, V.T., Dadmohammadi, Y., Salehi, S., Kang, Z., Allan, J. N., Ramasubramanian, M., & Cokely, E.T. (2017) Integrating Human Factors into Engineering Curriculum: Essential Training for Students, In *Proceedings of the 2017 Offshore Technology Conference*, May 1-4, Houston, TX.
12. Ybarra, V.T., Dadmohammadi, Y., Salehi, S., Kang, Z., Allan, J. N., Ramasubramanian, M., & Cokely, E. T. (2017). Drilling down on cognitive processes: Using process tracing with oil well operators. In *Proceedings of the 2017 European Group of Process Tracing Studies in Judgment and Decision Making*, June 22-24, Galway, Ireland.

**Technical Reports (Total: 4)**

1. Kang, Z. and Mandal, S. (2017). Development of design concepts and algorithms in eye tracking research for a multi-element objects tracking task to support human performance analysis. Federal Aviation Administration.
2. Kang, Z. (2017). Development of a mixed methods approach to inform the design of new learning methods for a complex task: An application in multiple objects tracking task. Center for Research Program Development and Enrichment at the University of Oklahoma.
3. Bass, E. J., Kang, Z., Philips, B., Lyons, E., Bajaj, A., Junyent, F., and Beauchamp, R. (2014). Healthcare Systems Integrated Warning Assessment (HIWA) final report. North Central Texas Trauma Regional Advisory Council.
4. Richard, J. P., Kang, Z., and Narisetty, A. K. (2006). SOM v2.0: A simplified optimization model for empty car assignments. Union Pacific Company.

#### **PRESENTATIONS AND SEMINARS (Total: 14)**

1. "Eye tracking data analytics," *Human Factors and Ergonomics OU Chapter Big Meeting*, Norman, OK, Nov. 1, 2017.
2. "Data visualization methods in eye movement research," *OU ISE graduate seminar*, Norman, OK, Oct. 6, 2017.
3. "Q4 presentation: Characterization of visual scanning patterns and aircraft control strategies for training," *Solutions for Operational Aviation Research (SOAR) Q4 meeting*, Federal Aviation Administration Center of Excellence, FAA headquarters, Washington D.C., Jun. 15, 2017.
4. "Q3 presentation: Universal design for learning and multimodal training," *Solutions for Operational Aviation Research (SOAR) Q3 meeting*, Federal Aviation Administration Center of Excellence, Embry-Riddle Aeronautical University, Daytona, FL., 1 Mar. 2017.
5. "Q3 presentation: Characterization of visual scanning patterns and aircraft control strategies for training," *Solutions for Operational Aviation Research (SOAR) Q3 meeting*, Federal Aviation Administration Center of Excellence, Embry-Riddle Aeronautical University, Daytona, FL., Mar. 1, 2017.
6. "Q2 presentation: Universal design for learning and multimodal training," *Solutions for Operational Aviation Research (SOAR) Q2 meeting*, Federal Aviation Administration Center of Excellence, University of Oklahoma, Norman, OK, Dec. 1, 2017.
7. "Q2 presentation: Characterization of visual scanning patterns and aircraft control strategies for training," *Solutions for Operational Aviation Research (SOAR) Q4 meeting*, Federal Aviation Administration Center of Excellence, University of Oklahoma, Norman, OK, Dec. 1, 2017.
8. "Human factors professions and introduction to eye tracking," *Human Factors and Ergonomics Society OU Chapter meeting*, Norman, OK. Sep 15, 2016.
9. "Visual scanning analysis collaboration opportunities with Laureate Institute for Brain Research," Norman, OK. Jan 6, 2016.
10. "Eye tracking analysis: A demonstration," *Human Factors and Ergonomics Society OU Chapter meeting*, Norman, OK. Mar. 12, 2015.
11. "Towards big data analytics: Understanding database management systems," *Special seminar for IIE members and ISE students*, Norman, OK, Mar 9, 2015.
12. "Big data analytics: Visual scan path analysis," *Big data analytics meeting*, Center for Research Program Development and Enrichment, Norman, OK, Feb 20, 2015.
13. "Eye tracking research: Visual groupings and hierarchical clustering," *OU ISE graduate seminar*, Norman, OK, Oct. 22, 2014.
14. "Analysis of driving behaviors through eye tracking," *Hyundai Global Top Talent Forum*, Hyundai Motors Company, Detroit, MI, Nov. 14, 2011.

## TEACHING/ADVISING

### Instructor

Systems Analysis using Simulation (ISE 4663) and Simulation I (ISE 5663): Stochastic simulation theories and applications including manufacturing systems, service systems, human-integrated systems, terminal vs. steady state systems, queuing theory, distributions, non-stationary Poisson process, scheduling, statistical analysis of performance measures, and use of Arena. (Undergraduate and graduate course)

Data Driven Decision Making II (ISE 4853 and ISE5853): Applied statistical methods including mathematical modeling of experiment designs, parametric/non-parametric statistical methods, logistic regression, ANCOVA, database management, system, scientific writing, and use of SAS, R, and Microsoft Access. (Undergraduate and graduate course)

Cognitive Engineering and Decision Making (ISE 5813): Methodologies to evaluate human performance and model human decision making processes including human error, signal detection theory, information theory, information processing model, memory, perception, attention, workload, and situation awareness. (Graduate course)

### Ph.D. Advising (Total: 5)

1. Elizabeth M. Argyle, Industrial and Systems Engineering, May 2016, Supporting situation awareness and decision making in weather forecasting. Co-advised with Dr. Randa L. Shehab.  
*Elizabeth is currently a Research Fellow at the Institute for Aerospace Technology at the University of Nottingham.*
2. Abdulrahman Khamaj, expected May 2019.
3. Salem Naeeri, expected May 2019.
4. Saptarshi Mandal, expected Dec. 2019.
5. Amin G. Alhashim, expected Dec. 2019.

### M.S. Advising (Total: 8)

1. Saptarshi Mandal, Industrial and Systems Engineering, Dec. 2016, Analyzing eye tracking data in multielement moving target tracking: Directed weighted network analysis.  
*Saptarshi is currently studying with me as a Ph.D. student. He received the **Best Student Paper Award** from the Aerospace Technical Group during the In Proceedings of the Human Factors and Ergonomics Society 60th Annual Meeting, Washington D.C.*
2. Sarah N. McClung, Electrical and Computer Engineering, Aug. 2017, Mode reconfigurable bandpass filters with liquid metal enablement. Co-advised with Dr. Hjalti H. Sigmarsson.  
*Sarah is currently working in her family business in Austin, Texas.*
3. Lucas Cezard, expected Dec. 2017.
4. Lucas Mosoni, expected Dec. 2017.
5. Mattly Dragoo, expected May 2018.
6. Jiwon Jeon, expected May 2018.
7. Lauren Yeagle, expected Dec. 2018.
8. Tasfiq Alam, expected May 2019.

### Ph.D. committees (Total: 1)

1. Katie A. Wilson, Meteorology, University of Oklahoma (OU), Dec. 2016.  
*Katie's last name was Bowden before she married. She will be working at the National Weather Service in Norman, OK.*

### **M.S. committees (Total: 14)**

1. Enora Maze, Industrial and Systems Engineering, OU, Aug. 2016.
2. Bharadwaj Pallerlamudi, Industrial and Systems Engineering, OU, May 2017.
3. Karnakar Surabhi, Industrial and Systems Engineering, OU, May 2017.
4. Matthew R. Schlegel, Industrial and Systems Engineering, OU, May 2017.
5. Naresh Chivukula, Industrial and Systems Engineering, OU, May 2017.
6. Nayan Raguluri, Industrial and Systems Engineering, OU, May 2017.
7. Sai Krishna Bhavaraju, Industrial and Systems Engineering, OU, May 2016.
8. Sidhaarth Krishnamoorthy, Industrial and Systems Engineering, OU, Dec. 2016.
9. Somia Tripathy, Industrial and Systems Engineering, OU, Dec. 2016.
10. Emily K. Grimes, Industrial and Systems Engineering, OU, Dec. 2016.
11. Megan E. Snelling, Industrial and Systems Engineering, OU, Dec. 2016.
12. Srujanveer Reddy Kallem, Industrial and Systems Engineering, OU, May 2016.
13. Vykrum Vijayasekaran, Industrial and Systems Engineering, OU, May 2015.
14. Abdulrahman Khmaj, Industrial and Systems Engineering, OU, Dec. 2014.

### **Undergraduate Research Assistants (Total: 4)**

1. Lauren Yeagle\*, spring 2017 and summer 2017.
2. Mattlyn Drago\*, spring 2017 and summer 2017.
3. Brooke Brubaker, summer 2016.
4. Catherine Ha, fall 2014 and spring 2015.

*\*Lauren and Mattlyn won 1st place at the IISE South Central Regional Conference (held at Texas Tech University in 2017) based on their student project report for my course DDDM II. Title of their presentation at the conference was "Usability analysis of online weather interfaces."*

### **PROFESSIONAL SERVICE**

#### **Membership**

- 2012-current Member of IEEE System, Man, and Cybernetics Society (IEEE SMC).  
2009-current Member of Human Factors and Ergonomics Society (HFES).

#### **Offices Held**

- 2017-current Program Chair Elect of the Educational Technical Group in the Human Factors and Ergonomics Society.  
2014-2016 Student Awards and Affairs Officer of the Cognitive Engineering and Decision Making Technical Group in the Human Factors and Ergonomics Society.

#### **Advisor**

- 2014-current Faculty advisor, Human Factors and Ergonomics Society OU Chapter.

#### **Journal Reviewer**

- 2016-current Reviewer for IEEE Transactions on Affective Computing.  
2016-current Reviewer for the journal Applied Ergonomics.  
2016-current Reviewer for the journal Ergonomics.  
2016-current Reviewer for Human Factors & Ergonomics in Mfg. & Service Industries.  
2014-current Reviewer for Human Factors: The Journal of Human Factors and Ergonomics Society.  
2013-current Reviewer for IEEE Transactions on Systems, Man, & Cybernetics.  
2013-current Reviewer for IEEE Transactions on Human-Machine Systems.  
2013-current Reviewer for IEEE International Conference on Systems, Man, & Cybernetics.  
2011-current Reviewer for Human Factors and Ergonomic Society (HFES) Annual Meeting.

- 2013 Reviewer for International Journal of Human Computer Interaction (HCI).  
2011-2012 Reviewer for Journal of Operational Research Society.

**Services at the University of Oklahoma**

- 2017-current Assisted the development of research ideas and functional requirements documents for the “Research Initiatives in Psychology, Human Factors, and Forensics” to establish the National Environment Simulation and Testing (NEST) facility. Supported by the Office of the Vice President for Research.
- 2017-current Assisted the ISE director (i.e. chair) search as a committee member.
- 2016-current Advised ISE homepage interface design and content management.
- 2014-current Assisted graduate students’ activities as a member of ISE Graduate Committee.
- 2014-current Assisted the ABET evaluation of my undergraduate teaching courses.
- 2014-current Advised senior undergraduate Capstone projects (Total: 8).
- 2016-2017 Assisted in SWOT analysis and the development of strategic research focus areas for the “State and Future of the School of the ISE” as a member of the ISE Task Force team.
- 2015 Attended Faculty Colloquium at the IIE Annual Conference in Nashville, TN.



**GRANTS, COOPERATIVE AGREEMENTS, CONTRACTS, AND OTHER AWARDS.**

**Center Awards: Total of \$5M**

Role	Start	End	Minimum Budget	Sponsor	Title
Institutional Co-PI	8/12/16	8/11/21	\$5,000,000	Federal Aviation Administration (FAA)	Center of Excellence for Technical Training and Human Performance (COE TTHP): Solutions for Operational Aviation Research (SOAR)

**Other External Awards: \$342K of \$694K in total**

Role	Start	End	Budget	Sponsor	Title
PI	Pending		TBD (share 100%)	FAA Center of Excellence for TTHP FAA Cooperative Agreement	Runway safety analysis (Tentative)
Co-PI (S. Salehi, PI)	10/1/16	9/30/18	\$383,271 (share 30%)	National Academies of Science (NAS) 200007356, Project No. A18-0001.	Virtual Reality Offshore Operations Training Infrastructure: Enhancing Expert Containment, Decision Making, and Risk Communications
PI	9/9/16	3/8/18	\$186,000 (share 57%)	FAA Center of Excellence for TTHP FAA Cooperative Agreement 16-C-TTHP-OK-008 Amend #4, Project No. A17-0161.	Universal Design for Learning and Multi-Modal Training
PI	9/13/16	2/12/18	\$75,000 (share 95%)	FAA Center of Excellence for TTHP FAA Cooperative Agreement 16-C-TTHP-OK-008 Amend #8, Project No. A17-0162.	Characterization and Application of Air Traffic Controllers' Visual Search Patterns and Control Strategies for Efficient and Effective Training
PI	3/11 /15	12/31/16	\$49,545 (share 100%)	FAA Aviation Research Grants Program (AAQ-610) FAA Cooperative Agreement 15-G-006, Project No. 15-P-0009.	Development of Design Concepts and Algorithms in Eye Tracking Research for a Multi-element Objects Tracking and Controlling Task to Support Human Performance Analysis

**Internal Awards: Total of \$10K**

Role	Start	End	Budget	Sponsor	Title
PI	8/15/15	5/14/16	\$7,000	*Office of the Vice President for Research	Development of a mixed methods approach to inform the design of new learning methods for a complex task
PI	8/15/15	5/14/16	\$3,000	Honors Research Assistant Program	Visual scanpath analysis using eye tracking data

*\*Received as Junior Faculty Fellowship Award*