

# Enes Karaaslan, PhD

Civil Engineering Scientist, Entrepreneur

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I am an engineering scientist with a PhD degree from the University of Central Florida. My research focused on enhanced civil infrastructure assessment using artificial intelligence and mixed reality systems. The publications that formed my dissertation received multiple international best paper awards and generated patent for technology transfer. During my PhD education, I also co-founded Connected Wise and brought up to \$1M federal grant to develop a unique technology for the U.S. Department of Transportation.

## PROFESSIONAL

- 2020 - Current  
Orlando, FL

**UNIVERSITY OF CENTRAL FLORIDA** - Post-Doctoral Research Scholar

Leading the research efforts to develop a wearable inspection headset using Mixed Reality and Artificial Intelligence to help bridge inspectors with real-time analysis.

  - Received grant funding from Transportation Research Board
  - Selected for UCF Preeminent Postdoctoral Program (P3).
  - Writing grant proposals to secure additional funding for technology transfer.
  - Mentoring doctoral students and monitoring their research progress.
- 2018 – Current  
Orlando, FL

**CONNECTED WISE LLC** - Chief Executive Officer

Created strong R&D team to develop the machine-readable sign technology and on-board machine vision system to support autonomous vehicles in rural areas.

  - Received 2-Phase SBIR funding from the U.S. Department of Transportation.
  - Created strong University-Industry partnership through sponsored research.
  - Hired manufacturing assistance company to create an Innovative product.
  - Earned funding matching from Florida High Tech Corridor to the research partnership.
- 2015 - 2019  
Orlando, FL

**UNIVERSITY OF CENTRAL FLORIDA** - Doctoral Research Fellow

Conducted doctoral research in Civil Infrastructure Monitoring using novel methods, particularly focused on Mixed Reality and Artificial Intelligence.

  - Presented at scientific conferences, received multiple best paper awards.
  - Published articles at well-known academic journals.
  - Taught courses and administered engineering labs.
  - Performed graduate research and teaching assistantship duties
- 2012 – 2015  
Ankara, Turkey

**YUKSEL PROJECT INTERNATIONAL INC** - Transportation Design Engineer

Designed many large-scale transportation projects including interstate highways and high-speed rail.

  - Head of engineering at bridge structures design group.
  - Project manager at many International design projects.

## EDUCATIONAL

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- 2016 - 2019  
Orlando, FL  
**UNIVERSITY OF CENTRAL FLORIDA** - Civil Engineering  
*Doctor of Philosophy (Ph.D.)* – GPA: 3.98  
  
Created notable scientific impact with truly Interdisciplinary research in the fields of Structural Health Monitoring, Computer Vision and Data Science. The research generated Internationally recognized publications.
  - Dissertation Title: Enhanced Civil Infrastructure Assessment Using Artificial Intelligence and Mixed Reality.
  - Best Conference Paper at 1st International Conference on Smart Tourism, Smart Cities and Enabling Technologies.
  - Transportation Research Board Kikichi-Karlaftis Best Paper Award.
  - Filed Provisional Patent from the Dissertation Research.
  - Chaired at ASCE Structural Engineering Institute UCF chapter
- 2012 - 2015  
Ankara, Turkey  
**MIDDLE EAST TECHNICAL UNIVERSITY:** - Civil Engineering  
*Master of Science (M.Sc.)* – GPA: 3.50  
  
Gained Structural Engineering degree from the country's top technical university.
  - Thesis Title: Seismic Performance Assessment of Wide Beam Infill Joist Block Frame Structures in Turkey.
- 2007 - 2012  
Istanbul, Turkey  
**BOGAZICI UNIVERSITY:** - Civil Engineering  
*Bachelor of Science (B.Sc.)*– GPA: 3.24  
  
Graduated with honors from the country's most reputable university.
  - Actively involved in student organizations (chaired at BUSOS and BUYAP).
  - Exchange student at the *University of Oklahoma* (Fall 2011).

## ACADEMIC

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### *Journal Publications:*

- **E. Karaaslan**, Y. Zhao, O. Tatari, Comparative life cycle assessment of sport utility vehicles with different fuel options, *International Journal of Life Cycle Assessment*, pp: 333-347, 2018 **(Published)**.
- **E Karaaslan**, M Noori, JY Lee, L Wang, O Tatari, M Abdel-Aty, Modeling the effect of electric vehicle adoption on pedestrian traffic safety: An agent-based approach, pp: 198-210, 2018 **(Published)**.
- **Karaaslan, E.**, Bagci, U., & Catbas, F. N. "Artificial Intelligence Assisted Infrastructure Assessment using Mixed Reality Systems". *Transportation Research Record*, 2019. **(Published – Best Paper Award)**
- **Karaaslan, E.**, Bagci, U., & Catbas, F. N. "Attention-Guided Analysis of Infrastructure Damage with Semi-Supervised Deep Learning", *Automation in Construction Journal*, 2021. **(Accepted)**
- **Karaaslan E.**, Bagci U., Catbas F. N., "A Novel Decision Support Methodology for Long Term Management of Bridge Networks", in *Journal of Civil Structural Health Monitoring*, 2021 **(Accepted)**.
- **Karaaslan E**, Sen B, Ercan T, Laman H, Pol J., "Reading Vehicular Messages from Smart Road Signs: A Novel Method to Support Vehicle-To-Infrastructure in Rural Settings". *Transportation Research Record*, 2021. **(Published)**
- **Karaaslan, E.**, Sen, B., Ercan T., Laman, H., Pol, J. (2020). Artificial Intelligence Embedded On-Board Machine Vision System to Support Vehicle-to-Infrastructure. *Transportation Research Record*, 2021. **(Accepted)**

### Conference Publications:

- **Karaaslan, E.**, Bagci, U., & Catbas, F. N. "Smart Infrastructure Assessment using Mixed Reality and Artificial Intelligence". *1st International Conference on Smart Tourism, Smart Cities and Enabling Technologies*, 2019. **(Best Paper Award)**
- **Karaaslan E.**, Catbas F. N., "Fist: Framework for Infrastructure Support Technologies, A Decision Support Implementation for Bridge Networks", in *Transportation Research Board 97th Annual Meeting*, 2018.
- Hiasa S., **Karaaslan E.**, Shattenkirk W., Mildner C., Catbas F. N., "Bridge Inspection and Condition Assessment Using Image-Based Technologies with UAVs", in *Structures Congress*, 2018.
- Catbas F. N., Hiasa S., Dong C., Celik O., **Karaaslan E.**, "Comprehensive structural health monitoring at local and global level with vision-based technologies", in *26th ASTN symposium*, 2017.
- Hiasa S., **Karaaslan E.**, Catbas F. N., Infrared and High-definition Image-based Bridge Scanning Using UAVs without Traffic Control. in *ASNT 27th Annual Research Symposium*. 2018.

### Patents:

- **Provisional Patent: Karaaslan E.**, Bagci U., Catbas F. N. and the University of Central Florida, *Artificial Intelligence Collaborative System for Enhanced Inspections of Infrastructures Using Mixed Reality*, Application No: 629455568
- **Non-Provisional Patent: E. Karaaslan**, *On-board Machine Vision Device for Activating Vehicular Messages from Traffic Signs*, Filing No: US 16/882,881.

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## REFERENCES

### **DR. NECATI CATBAS**

Civil Engineering Professor  
University of Central Florida  
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### **DR. ULAS BAGCI**

Computer Science Professor  
University of Central Florida  
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### **CAROLANN DYKES LOGUE**

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