DOGA DEMIREL, PH.D.

I earned my Ph.D. in Computer Science from the University of Arkansas at Little Rock (UALR) (https://ualr.edu/), where I completed my thesis on design and development of virtual interactive simulations for surgical training. I received an M.Sc. in Computer Science from the University of Central Arkansas (UCA) (https://uca.edu/) and a B.Sc. in Computer Science from UALR (https://ualr.edu/). During my time at UCA (https://uca.edu/) and UALR (https://ualr.edu/), I had the pleasure of working in the Virtual Reality, Simulation, Imaging and Modeling (ViRaSIM) Lab at UCA (https://uca.edu/).

I am an Associate Professor in the School of Computer Science (https://www.ou.edu/coe/cs) and an affiliated faculty in the Data Science and Analytics Institute (https://www.ou.edu/coe/dsai) at the University of Oklahoma (https://ou.edu/). Also, I am the founder and director of the Virtual Reality, Interactive Simulation, and Biomedical (VRISB) Lab at OU. Before joining OU (https://ou.edu/), I was an Asscoiate Professor and the Assistant Chair in the Department of Computer Science at Florida Polytechnic University (https://floridapoly.edu/).

Doga Demirel's faculty profile at University of Oklahoma (https://www.ou.edu/coe/cs/people/faculty/demirel)

(https://www.linkedin.com/in/doga-demirel?trk=profile-badge)

NEWS

- [November 2025] VRISB Lab member Dervishan Sezer successfully defended his MSc thesis in Data Science and Analytics, titled *"Integrating Physics-Informed Simulation and Objective Assessment for Robotic Surgery Training."* Congratulations, Dervishan! He will continue his research in the VRISB Lab as a PhD student in Data Science and Analytics at OU.
- [October 2025] VRISB Lab member Jacob Barker succesfully passed his PhD Oral Examination. Congratualtions, Jacob!
- [October 2025] We held the 1st International Workshop on XR Medical Applications (XR-MED'25) at IEEE ISMAR 2025 in Daejeon, South Korea. [Workshop Websi (https://sites.google.com/view/xr-med) [IEEE Workshop Website] (https://www.ieeeismar.net/2025/contribute/workshop-papers/)
- [September 2025] Our paper *"Time and Expertise in Open Structural Rhinoplasty: A Task-Based Analysis using Hierarchical Task Analysis and Machine Learning"* was published in the Journal of Craniofacial Surgery [Link] (https://doi.org/10.1097/SCS.0000000000011959) [Publication] (Papers/time_and_expertise_in_open_structural_rhinoplasty_.148.pdf)
- [August 2025] Our paper *"Graph Neural Networks for Realistic Bleeding Prediction in Surgical Simulators"* was published in the Journal of Imaging Informatics in Medicine [Link] (https://doi.org/10.1007/s10278-025-01635-y) [Publication] (Papers/f1315dc0-d28f-40ec-ab59-f7e47a05ab03.pdf)
- [July 2025] Our paper *"Design and Development of a Real-Time Virtual Bariatric Endoscopic Simulator with Haptic Feedback"* was published in ACM Transactions on Sensor Networks [Link] (https://dl.acm.org/doi/abs/10.1145/3747184) [Publication] (Papers/3747184.pdf)

- [June 2025] Our (Doga Demirel, Jin Ryong Kim, and Ganesh Sankaranarayanan) proposal to organize the 1st International Workshop on XR Medical Applications (XR-MED'25) was accepted by IEEE ISMAR 2025. [Workshop Website] (https://sites.google.com/view/xr-med)
- [March 2025] Panelist at American College of Surgeons' Surgeons and Engineers: A Dialogue on Surgical Simulation panel 'How to Build Better Surgical Simulato [Website] (https://www.facs.org/for-medical-professionals/conferences-and-meetings/surgeons-and-engineers/2025/) [Program Book] (https://www.facs.org/media/el2bpza1/25-surgeons-and-engineers-program.pdf)
- [March 2025] IEEE VR (Training XR) - Presented *"Crack-Free Multi-Resolution Dynamic Volume Refinement for Physics-Based Bone Drilling and Shaving in Arthroscopic Procedures"* [Link] (https://ieeexplore.ieee.org/abstract/document/10972710) [Publication] (Papers/Crack-Free_Multi-Resolution_Dynamic_Volume_Refinement_for_Physics-Based_Bone_Drilling_and_Shaving_in_Arthroscopic_Procedures.pdf)

EDUCATION

Here is an overview of my educational background.

UNIVERSITY OF ARKANSAS AT LITTLE ROCK

- Ph.D. in Integrated Computing, Computer Science
- January 2016 - December 2018

UNIVERSITY OF CENTRAL ARKANSAS

- M.Sc. in Applied Computing
- August 2013 - December 2015

UNIVERSITY OF ARKANSAS AT LITTLE ROCK

- B.Sc. in Computer Science and Minor in Mathematics
- August 2009 - May 2013

EMPLOYMENT

Here is an overview of my employment history.