CURRICULUM VITAE

Yike Zhang, Ph.D.
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RESEARCH INTERESTS

Tenure-track Assistant Professor in Software Engineering with a robust background in Healthcare and Education related projects. Expertise in human-computer interaction (HCI) application development, collaborative learning environments, and leading nursing simulation-based training research initiatives. Passionate about bridging secure healthcare and education through cutting-edge technology.

TEACHING EXPERIENCE

2026	EG4361/EG6334 Software Quality Assurance and Testing.	St. Mary's University
2026	CS3300/CS6375 Intro to Python Programming for Data Analytics.	St. Mary's University
2025	EG3353/EG6306 Engineering Project Management.	St. Mary's University
2025	EG4338/EG6338 Special Topics: Machine Learning.	St. Mary's University

ACADEMIC EXPERIENCE

2025-present	Assistant Professor, Department of CSECE.	St. Mary's University
2021-2025	Research Assistant, Department of Computer Science.	Vanderbilt University
2019-2021	Research Assistant, Engineering Department.	St. Mary's University

EDUCATION

2025	Ph.D. in Computer Science. Dissertation: *Deep-Learning-Enhanced Atlas-Based Preoperative and Intraoperative Registration for Cochlear Implant Surgery Navigation*	Vanderbilt University
2021	M.S. in Computer Engineering. Thesis: *Vector-based Efficient Data Hiding in Encrypted Images via Multi-MSB Replacement*	St. Mary's University
2019	B.E. in Computer Science and Technology. Thesis: *Smart Home Control System Based on STM32*	Chengdu Neusoft University

HONORS AND AWARDS

2021	Full Engineering Graduate Fellowship.	Vanderbilt University
2021	Distinguished Graduate.	St. Mary's University
2019	Full Graduate Research Fellowship.	St. Mary's University

Last updated: 2026-06-08

PROFESSIONAL SERVICE

Session Chair

Session co-chair of *Augmented, Virtual and Mixed Reality Simulation I* at Applied Human Factors and Ergonomics (AHFE) International Conference Hawaii Edition 2025.

PEER-REVIEWED PUBLICATIONS

Most up-to-date publications can be found via my Google Scholar.

Journals

[1] Fonteles Joyce Horn, Cohn Clayton, Ayalon Efrat, Zhou Mengxi, Ashwin T. S., Davalos Eduardo, Rayala Surya**, Zhang Yike**, et al., "Analyzing embodied learning in classroom settings: A human-in-the-loop ai approach for multimodal learning analytics," *Learning and Instruction*, 2026.

[2] **Zhang Yike**, Davalos Eduardo, Su Dingjie, Lou Ange, and Noble Jack H., "From preoperative computed tomography to postmastoidectomy mesh construction: Mastoidectomy shape prediction for cochlear implant surgery," *Journal of Medical Imaging*, 2026.

[3] **Zhang Yike** and Luo Wenbin, "Vector-based efficient data hiding in encrypted images via multi-msb replacement," *IEEE Transactions on Circuits and Systems for Video Technology*, vol. 32, no. 11, pp. 7359–7372, 2022.

Conferences

[1] Wang Ziyi**, Zhang Yike**, and Noble Jack H., "Real-time prediction of optimal surgical tool pose for cochlear implant insertion," in *Medical Imaging 2026: Image-Guided Procedures, Robotic Interventions, and Modeling*, M. E. Rettmann and P. Jannin, Eds., International Society for Optics and Photonics, vol. 13927, SPIE, 2026, p. 1 392 726.

[2] **Zhang Yike**, Anaya Eduardo Davalos, and Noble Jack H., "Monocular marker-free patient-to-image intraoperative registration for cochlear implant surgery," in *Medical Imaging 2026: Image-Guided Procedures, Robotic Interventions, and Modeling*, M. E. Rettmann and P. Jannin, Eds., International Society for Optics and Photonics, vol. 13927, SPIE, 2026, p. 1 392 727.

[3] **Zhang Yike** and Noble Jack H., "Weakly-supervised mamba-based mastoidectomy shape prediction for cochlear implant surgery using 3d t-distribution loss," in *Medical Imaging 2026: Image Processing*, International Society for Optics and Photonics, SPIE, 2026.

[4] Davalos Eduardo**, Zhang Yike**, Srivastava Namrata, Salas Jorge Alberto, McFadden Sara, Cho Sun-Joo, Biswas Gautam, and Goodwin Amanda, "Llms as educational analysts: Transforming multimodal data traces into actionable reading assessment reports," in *Artificial Intelligence in Education*, Cham: Springer Nature Switzerland, 2025, pp. 191–204.

[5] Lou Ange, Li Yamin**, Zhang Yike**, Labadie Robert F., and Noble Jack H., "Zero-shot surgical tool segmentation in monocular video using segment anything model 2," in *Medical Imaging 2025: Image Processing*, International Society for Optics and Photonics, SPIE, 2025.

[6] Lou Ange, Li Yamin**, Zhang Yike**, and Noble Jack H., "Surgical depth anything: Depth estimation for surgical scenes using foundation models," in *Medical Imaging 2025: Image-Guided Procedures, Robotic Interventions, and Modeling*, International Society for Optics and Photonics, SPIE, 2025.

[7] Timalsina Umesh, Davalos Anaya Eduardo, Sanda Nihar**, Zhang Yike**, Horn Fonteles Joyce, T S Ashwin, and Biswas Gautam, *SyncFlow: A scalable platform for multimodal learning analytics*, Jan. 2025.

[8] **Zhang Yike** and Davalos Eduardo, "Interactive visualization for human-in-the-loop 3d-to-2d pose annotation," in *Human Factors in Design, Engineering, and Computing (AHFE International)*, 2025.

[9] **Zhang Yike**, Davalos Eduardo, Su Dingjie, Lou Ange, and Noble Jack H., "Self-supervised mamba-based mastoidectomy shape prediction for cochlear implant surgery," in *Medical Imaging 2025: Image Processing*, International Society for Optics and Photonics, SPIE, 2025.

[10] **Zhang Yike** and Noble Jack H., "Post-mastoidectomy surface multiview synthesis from a single microscopy image," in *Medical Imaging 2025: Image-Guided Procedures, Robotic Interventions, and Modeling*, International Society for Optics and Photonics, SPIE, 2025.

[11] Davalos Eduardo, Srivastava Namrata**, Zhang Yike**, Goodwin Amanda, and Biswas Gautam, "Gazeviz: A web-based approach for visualizing learner gaze patterns in online educational environments," in *Proceedings of the International Conference on Computers in Education (ICCE 2024)*, Nov. 2024.

[12] Davalos Eduardo**, Zhang Yike**, S Ashwin T, Fonteles Joyce Horn, Timalsina Umesh, and Biswas Gautam, "3d gaze tracking for studying collaborative interactions in mixed-reality environments," in *Companion Proceedings of the 26th International Conference on Multimodal Interaction*, ser. ICMI '24 Companion, New York, NY, USA: Association for Computing Machinery, 2024, pp. 175–183.

[13] Fonteles Joyce, Davalos Eduardo, Ashwin T. S.**, Zhang Yike**, Zhou Mengxi, Ayalon Efrat, Lane Alicia, Steinberg Selena, Anton Gabriella, Danish Joshua, Enyedy Noel, and Biswas Gautam, "A first step in using machine learning methods to enhance interaction analysis for embodied learning environments," in *Artificial Intelligence in Education*, Cham: Springer Nature Switzerland, 2024, pp. 3–16.

[14] Lou Ange, Li Yamin, Yao Xing**, Zhang Yike**, and Noble Jack H., "Samsnerf: Segment anything model (sam) guides dynamic surgical scene reconstruction by neural radiance field (nerf)," in *Medical Imaging 2024: Image-Guided Procedures, Robotic Interventions, and Modeling*, International Society for Optics and Photonics, SPIE, 2024.

[15] **Zhang Yike**, Davalos Eduardo, Su Dingjie, Lou Ange, and Noble Jack H., "Monocular microscope to CT registration using pose estimation of the incus for augmented reality cochlear implant surgery," in *Medical Imaging 2024: Image-Guided Procedures, Robotic Interventions, and Modeling*, J. H. Siewerdsen and M. E. Rettmann, Eds., International Society for Optics and Photonics, vol. 12928, SPIE, 2024, p. 129282I.

[16] Davalos Eduardo, Timalsina Umesh**, Zhang Yike**, Wu Jiayi, Fonteles Joyce Horn, and Biswas Gautam, "Chimerapy: A scientific distributed streaming framework for real-time multimodal data retrieval and processing," in *2023 IEEE International Conference on Big Data (BigData)*, 2023, pp. 201–206.

[17] **Zhang Yike** and Noble Jack H., "Self-supervised registration and segmentation on ossicles with a single ground truth label," in *Medical Imaging 2023: Image-Guided Procedures, Robotic Interventions, and Modeling*, International Society for Optics and Photonics, SPIE, 2023.

INVITED TALKS

2025 Oral presentation, "Interactive Visualization for Human-in-the-Loop 3D-to-2D Pose Annotation," Applied Human Factors and Ergonomics (AHFE) International Conference Hawaii Edition 2025.

2025 Oral presentation, "WEBEYETRACK: Scalable Eye-Tracking for the Browser via On-Device Few-Shot Personalization," IEEE Computer Society in San Antonio, TX.

2025 (***Invited Paper***) Oral presentation, "Self-supervised Mamba-based Mastoidectomy Shape Prediction for Cochlear Implant Surgery," SPIE Medical Imaging 2025: Image Processing.

2025 Oral presentation, "Mastoidectomy Multi-view Synthesis from a Single Microscopy Image," SPIE Medical Imaging 2025: Image-Guided Procedures, Robotic Interventions, and Modeling.

2023 Oral presentation, "Self-supervised Registration and Segmentation on Ossicles with a Single Ground Truth Label," SPIE Medical Imaging 2023: Image-Guided Procedures, Robotic Interventions, and Modeling.