• edavalosanaya.github.io

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# **Eduardo Davalos**

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Nashville, US

n edavalosanaya Education Aug. 2021 to present Vanderbilt University, Nashville, TN, USA, Computer Science GPA: 3.95/4.0 MS St.Mary's University, San Antonio, TX, USA, Electrical Engineering July 2019 to Apr. 2021 • GPA: 4.0/4.0 • Thesis: FastPoseCNN: Real-Time Monocular Category-Level Pose and Size **Estimation Framework** BS St.Mary's University, San Antonio, TX, USA, Electrical Engineering July 2015 to Apr. 2019 GPA: 3.93/4.0 • Thesis: SKORE: Smart Keyboard Operated by Robotic Educator **Experience** \_ American Red Cross, Fullstack Software Engineer - Intern May 2019 to July 2019 2 months • Project Description: Developed a web-based application for the American Red Cross to manage and monitor the status of edge devices deployed in the field. • Technologies: Python, Wordpress, Arduino, Docker. St. Mary's Engineering Department, Robotics Teaching Assistant May 2016 to July 2016 2 months Mentored, directed, and guided students throughout a summer program, teaching them principle components in mechanical design, electrical circuitry, and software development aimed at robotics. St. Mary's Learning Assistance Center, Programming and Physics Tutor July 2016 to Mar. 2018 1 year 8 months • Instructed and guided students in the subjects of classical physics and C programming. **Publications** Apr. 2024 3D Gaze Tracking for Studying Collaborative Interactions in Mixed-Reality Environments Eduardo Davalos, Joyce H. Fonteles, Yike Zhang, Ashwin T. S., Umesh Timalsina, Gautam Biswas Monocular Microscope to CT Registration using Pose Estimation of the Incus for Mar. 2024 Augmented Reality Cochlear Implant Surgery 🗹 Yike Zhang, Eduardo Davalos, Dingjie Su, Ange Lou, Jack H. Noble A First Step Using Machine Learning Methods to Enhance Interaction Analysis for Apr. 2024 Embodied Learning Environments 🗹 Joyce H. Fonteles, Eduardo Davalos, Ashwin T. S., Yike Zhang, Mengxi Zhou, Efrat Ayalon, Alicia Lane, Selena Steinberg, Gabriella Anton, Joshua Danish, Noel Enyedy, Gautam Biswas

ChimeraPy: A Scientific Distributed Streaming Framework for Real-time Multimodal

Data Retrieval and Processing 🗹

## Identifying Gaze Behavior Evolution via Temporal Fully-Weighted Scanpath Graphs

Mar. 2023

Eduardo Davalos, Caleb Vatral, Clayton Cohn, Joyce Horn Fonteles, Gautam Biswas, Naveeduddin Mohammed, Madison Lee, Daniel Levin

#### Prediction of Students' Self-confidence Using Multimodal Features in an Experiential Nurse Training Environment 🗹

June 2023

Caleb Vatral, Madison Lee, Clayton Cohn, Eduardo Davalos

#### A Tale of Two Nurses: Studying Groupwork in Nurse Training by Analyzing Taskwork Roles, Social Interactions, and Self-Efficacy

June 2023

Caleb Vatral, Clayton Cohn, Eduardo Davalos, Gautam Biswas, Madison Lee, Dan Levin, Eric Hall, Ho Ellen Holt

#### Using the DiCoT framework for integrated multimodal analysis in mixed-reality training environments 🗹

July 2022

Caleb Vatral, Gautam Biswas, Clayton Cohn, Eduardo Davalos, Naveeduddin Mohammed

#### FastPoseCNN: Real-Time Monocular Category-Level Pose and Size Estimation Framework 🗹

2021-5

Eduardo Davalos, Mehran Aminian

### Projects \_

Oct. 2023 RedForest 🗹

- Project Description: Developed a EdTech platform for scalable multimodal learning analytics and AI, providing self-regulating feedback to teachers and students.
- Technologies: TS/JS, NextJS, Tailwind, TensorFlow, D3.

SyncFlow Jan. 2024

- Project Description: Developed both a cloud and IoT platform for scalable multimodal analytics, including streaming, storage, processing, and AI logic of multi-
- Technologies: Rust, Python, WebRTC, NextJS, Tailwind.

ChimeraPy 🗹 June 2021

- · Project Description: Developed a scientific distributed streaming framework for real-time multimodal data retrieval and processing.
- Technologies: Python, ZeroMQ.

SKORE June 2018

- Project Description: Developed a smart keyboard operated by a robotic educator.
- Technologies: Python, Arduino.

### Technologies \_\_\_\_\_

Languages: Python, JS/TS, Rust, C++, Java

Libraries: PyTorch, TensorFlow, ReactJS, NextJS, FastAPI, Flask, Numpy, Pandas, D3, Matplotlib