Esteban Romero

I build technological interfaces to explore the worlds within, promote understanding, and foster connection.

B.S. Biomedical Engineering @ Tecnológico de Monterrey

August 2020 - June 2024

Information

esromerog@gmail.com
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Skills

Digital Creativity and Development

Experience with
- Unity for VR development
- Kinect 2 SDK for C++
- P5.js
- Processing
- React
- Three.js
- OpenAI API
- MIDI controllers & Ableton live
- User of other creative professional tools like Figma, Adobe Illustrator, Final Cut Pro X

Signal Processing and Analysis

- Multimodal real-time signal acquisition and processing in
- Python using MNE, OpenCV, BrainFlow, and LSL.
- Matlab with EEG Lab, the image processing toolbox and analysis through basic classification/regression.
- Performed basic classification/regression analysis in Minitab.

Bioinstrumentation

- C++ for microcontrollers
- Circuit design for EEG, ECG & EMG

Experience

July 2023 · Ongoing

New York University Department of Psychology
Intern · Supervisor: Dr. Suzanne Dikker

UX/UI designer for the MindHive platform (mindhive.science)
- A platform designed for high-school students to design, peer review, participate and perform scientific studies.
- Contributed with research and design to the proposal of a tool promoting data engagement & analysis.
- Aiding in the development of the new tool using LLMs and a Python-backed interface for enchanced learning and data visualization.
- **Main front-end developer and designer** for Creative Representations of the Quantified Self
- Connecting physiological data from EMOTIV, Muse, and LSL with creative visualization in a web-based app (React, P5.js, Three.js)
- Helping in designing high-school level curriculum.

March 2022 · June 2023

BCI Lab, Tec de Monterrey Guadalajara
Research Affiliate · Supervisor: Dr. Javier Mauricio Antelís

- Assisted in conducting research on motor rehabilitation treatments using a neuroprosthesis.
- Designed the methodology, conducted research, and data analysis on a study about stress during real-world exam situations.

August 2022 · June 2023

BRAIN Tec, Monterrey
Research Affiliate · Supervisors: Dr. Mauricio Adolfo Ramírez and Dr. Jorge de Jesús Lozoya

- **Software programmer** for the real-time data collection, recording, and preprocessing using EEG Enophone devices and BrainFlow for an ongoing research project that aims to use brain-to-brain synchrony between students and teachers as a metric for wearables.
- Currently writing a review on the use of Wearable Devices in Education.

September 2022

TEDx Tec de Monterrey Guadalajara
Speaker: "Capturas de los paisajes de la mente" [Pictures from the mind]

Exposition about the future of immersive adaptive and realistic environments, from the perspective of generative art, video game development, and human-computer interfaces.

January 2022 · June 2023

wavesense Student Club
Vice-President and Co-Founder

- Led a 30+ member student club dedicated to neuroscience and BCIs.
- Within the group, we implemented projects such as the **Mutual Wave Machine, A thousand-word speller,** and **Waterfall.**
- Hosted 4 workshops for high-school and freshmen college students to showcase simple BCIs, explain basic neuroscientific concepts and present basic engineering pipelines.