Jesus Alan Hernandez Galvan

🌐 unlikeghost.github.io   📞 (+52) 614 462 7052

✉ alanhernandezgalvan@icloud.com   🔗 linkedin.com/in/jesusalanhernandezg

Summary

Recent graduate in biomedical engineering with 6 years of hands-on research experience in multiple laboratories in Mexico and Japan. Published researcher with 3 peer-reviewed papers in AI/ML applications for healthcare. Passionate about Brain-Computer Interfaces and Artificial Intelligence, with proven leadership skills and 1 year of industry experience applying research expertise to practical solutions. Experienced in translating academic innovation into real-world systems, including production-ready clinical tools and cross-border collaborations.

Education

Bachelor of Biomedical Engineering

Universidad Autónoma de Chihuahua, Facultad de Medicina y Ciencias Biomédicas   *Jul 2018 – Feb 2024*
Graduated with Special Mention
Thesis: "Estrategias para la paralelización de modelos en entornos multi-GPU"

Publications

Peer-reviewed Articles

- **Hernández-Galván, A.**, et al. (2023). *A prototypical network for few-shot recognition of speech imagery data.* **Biomedical Signal Processing and Control**, 86 (IF: 5.899). doi

- Sierra Juárez, M. A., **Hernández-Galván, A.**, et al. (2024). *Validación de un modelo de IA para predicción de mortalidad por sepsis.* **Medicina Interna de México**, 40(3). doi

- Saad-Manzanera, M. I., **Hernández-Galván, A.**, et al. (2023). *Outcome classification model for Covid-19 patients using AI.* **Salud Pública de México**, 65(1). doi

Conference Papers

- **Hernández-Galván, A.**, et al. (2022). *Imagined Speech Recognition Using Prototypical Network.* **XLV Mexican Conference on Biomedical Engineering**. doi

Research Experience

Research Assistant | AI & Medical Computing Lab, UACH   *2023 – 2025*
Abimael Guzmán, PhD

- Conceived, designed, and developed ScOPE algorithm - a novel parameter-free, training-free approach for molecular property prediction that outperformed state-of-the-art AUC benchmarks on multiple datasets (BBBP, HIV, BACE, ClinTox)

- Co-author on research article in development targeting high-impact journal publication

- Implemented compression algorithms and distance metrics using SMILES notation for cost-effective molecular analysis

Research Assistant | Computer Vision Lab, UACH *2021 – 2023*
Graciela Ramírez, PhD

- Conceived and developed subject-independent EEG-based speech recognition system using prototypical networks, achieving cross-device compatibility with minimal training data

- Implemented meta-learning approach that reduced data requirements by 90% compared to traditional methods while maintaining robust performance across different EEG devices

- Published first-author research in high-impact journal (Biomedical Signal Processing and Control, IF: 5.899)

- Presented research findings at XLV Mexican Conference on Biomedical Engineering (CNIB 2022) and as invited speaker at SOMIB National Congress

Research Intern | Mirai Innovation Research Institute, Osaka, Japan *2020 – 2021*
Christian Peñaloza, PhD

- Developed AI-powered voice-based disease prediction system that analyzes spoken symptoms using natural language processing for clinical decision support

- Created COVID-19 compliance web application featuring face recognition and mask detection systems for workplace safety monitoring

- Contributed to neuromarketing research projects, focusing on user interface development and human subject studies

- Supported robotic applications research involving brain-computer interface implementations and human subject experimentation

Research Assistant | Computational Physical Chemistry Lab, UACH *2018 – 2025*
Javier Camarillo, PhD

- Developed drug interaction prediction system using random forest algorithms, presented findings at academic symposium

- Deployed maternal and fetal mortality risk assessment model to production through web-based platform for clinical use

- Designed and implemented distributed multi-GPU segmentation network using PyTorch DDP with NCCL backend

- Created software solutions for medical practice management and clinical decision support systems

Professional Experience

Innovation Engineer | Safran Engineering Services *Mar 2024 – Jul 2025*
Chihuahua, México

- Established foundational infrastructure for new innovation department, including technology standardization, role definitions across Americas region, and scalable backend architecture using FastAPI

- Collaborated with international teams across France, India, and Mexico on innovation initiatives

- Led development of LLM-based CV classification system to optimize recruitment using job descriptions as reference criteria

- Built OCR-based validation system for reference labels, improving data accuracy in industrial processes

- Created web applications for internal tools and proof-of-concept demonstrations

- Contributed to frontend library development for enhanced user interface components

- Presented technical results to C-level executives including CTO and CEO of SES business unit

- Represented company at SES Innovation event, showcasing innovative project portfolio

Co-founder & Technical Lead | Biomedical Solutions Eonia *Oct 2023 – Present*
Chihuahua, México

- Co-founded startup developing technology solutions for healthcare applications

- Leading technical development of AI-powered diagnostic platform, including backend API architecture and machine learning model implementation

Technical Skills

Programming Languages: Python, C++, JavaScript, SQL

AI/ML Frameworks: PyTorch, TensorFlow, Scikit-learn, NumPy, SciPy, Pandas

Web Technologies: React, Next.js, Node.js, FastAPI, RESTful APIs, SQLAlchemy, HTML, CSS

Tools & Technologies: Git, Docker, NGINX

Databases: MySQL, PostgreSQL, MongoDB

Languages

Spanish (Native), English (C1 Advanced - EF SET Certificate 63/100, July 2025)

Leadership & Affiliations

- Vice President – SOMIB University Chapter

- Member – IEEE (Institute of Electrical and Electronics Engineers)

Selected Talks

- "Synergy: Biomedical Engineering and Artificial Intelligence" – Coloquio de Ingeniería Biomédica IBERO, Puebla (2023)

- "The Importance of Neuroscience in Biomedical Engineering" – Congreso de la Ingeniería Biomédica, Instituto Politécnico Nacional (2023)

- "Imagined Speech Recognition Using Prototypical Networks" – Congreso Nacional de Ingeniería Biomédica SOMIB (2022)

Personal Interests

Travel, Fitness, Reading, Hiking, Photography, Wildlife Conservation