Jesus Alan Hernandez Galvan

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Summary

Biomedical engineering graduate with international research experience and industry background. Three published papers in healthcare AI, with hands-on experience deploying research solutions in production environments.

Education

Bachelor of Biomedical Engineering
Universidad Autónoma de Chihuahua, Facultad de Medicina y Ciencias Biomédicas   *Jul 2018 – Feb 2024*
Graduated with Special Mention, GPA: 8.83/10.0 (∼3.5/4.0 US scale)
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

- Developed ScOPE algorithm - novel parameter-free molecular property prediction approach using innovative compression algorithms and dissimilarity metrics, achieving competitive performance on standard benchmarks (BBBP, HIV, BACE, ClinTox)
- First-author research manuscript in development targeting high-impact journal publication on novel algorithmic approaches

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
- Supported interdisciplinary research in neuromarketing and brain-computer interfaces, including human subject studies, UI development, and robotic system implementations

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

- Developed comprehensive drug interaction prediction system using random forest algorithms with integrated clinical decision support, presented findings at national 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 for medical imaging applications

Professional Experience

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

- Established innovation department infrastructure across Americas region, developing scalable FastAPI backends, frontend component libraries, and technology standards
- 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
- Presented technical results to C-level executives including CTO and CEO of SES business unit and collaborated with international teams across France, India, and Mexico on innovation initiatives

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

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)

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)