

Cesar Alan Torres Quiroz

Tijuana, Baja California, México. catq2596@gmail.com cesartorres.org.

Education

- **Instituto Tecnológico de Tijuana** **Tijuana, Baja California, Class of 2023**
Master's degree in Computer Science with focus in Soft Computing.
Research advisor. Claudia I, Gonzalez.
- **CETYS Universidad Campus Tijuana.** **Tijuana, Baja California, Class of 2019**
BSc in Computer Science Engineering, *Cum Laude*

Research

- Torres, C.; Gonzalez, C.I.; Martinez, G.E. Deep neural network approach for guitar type classification in real time Universidad Autónoma de Baja California, VII Congreso Internacional de Investigación Tijuana. Tijuana, B. C. Mexico. April 25-28, 2022. (Oral Presentation) .
- Torres, C.; Gonzalez, C.I.; Martinez, G.E. Fuzzy convolutional layer in deep neural networks for feature extraction. Instituto Tecnológico de Tijuana, International Seminar of Computational Intelligence ISCI 2022. Tijuana, B. C. Mexico. August 22-23, 2022. (Oral Presentation).
- Torres, C.; Gonzalez, C.I.; Martinez, G.E. Fuzzy Edge Detection as a Preprocessing Layer in Deep Neural Networks for Guitar Classification. Sensors 2022, 22, 5892. <https://doi.org/10.3390/s22155892>.
- Torres, C.; Gonzalez, C.I.; Martinez, G.E. Traffic Sign Recognition Using Fuzzy Preprocessing and Deep Neural Networks. Studies in Computational Intelligence (SCI, volume 1096). 2023, https://doi.org/10.1007/978-3-031-28999-6_5.
- Torres, C.; Deep Fuzzy Neural Learning Model Applied to Detection and Classification Problems. Dissertation thesis for Master's Degree. Instituto Tecnológico de Tijuana 2023.
- Gonzalez, C.I.; Torres, C. Type-2 Fuzzy Image enhancement to improve the performance of convolutional neural networks. 2023 10th International Conference on Soft Computing & Machine Intelligence. Mexico City, Mexico. November 25-26 (Oral Presentation).
- Gonzalez, C.I.; Torres, C. Fuzzy Convolutional Neural Network Model Applied to Classification Problems. Cognitive Computing and Advances in Intelligent Systems, CCAIS-2023. November 30 (Oral Presentation).

Work Experience

- **Sistemas Audiovisuales Tijuana** **Tijuana, Baja California, 2011-2021**
Audio and illumination technician for concerts and conferences.
- **Samsung Research Tijuana.** **Tijuana, Baja California, Feb 2023 – actual**
Machine learning Engineer/Research Engineer.
Research Engineer at proof-of-concept team, working on Machine Learning/Computer Vision problems with state-of-the-art models tailored to innovation in new Samsung Products.

Technical Skills

- **Programming Languages**
Python, MATLAB, Java, C++, C#, JavaScript.
- **Machine Learning/ Deep Learning Frameworks**
TensorFlow, PyTorch, Sci-Kit Learn.
- **Technologies**

- OpenCV, NumPy, Pandas, Nvidia CUDA Toolkit, Docker, Keras, Windows subsystem for Linux.
- **Operating Systems**
Linux (Ubuntu, Debian, RaspbianOS, PopOS). OSX and Windows.

Awards

- **Outstanding Project:** Engineering Project Fair Cety's Universidad 2019.
- **127th Place:** Marathon Behind the code 2020 by IBM (Over 50,000 participants in Latin America)
- **1st Place:** AI Hackathon by AiLabSchool 2022 sponsored by Microsoft.

Research Interests

My research interest embraces the following areas:

- Computer Vision.
- Convolutional Neural Networks.
- Visual Transformer Models.
- Large Language Models.
- Synthetic Image Generation.

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Educación

- **Instituto Tecnológico de Tijuana** **Tijuana, Baja California, Clase de 2023**
Maestría en ciencias de la computación con enfoque en computo inteligente.
Directora de tesis. Claudia I, Gonzalez.
- **CETYS Universidad Campus Tijuana.** **Tijuana, Baja California, Clase de 2019**
Licenciatura en ingeniería en ciencias de la computación, *Cum Laude*.

Investigacion

- Torres, C.; Gonzalez, C.I.; Martinez, G.E. Deep neural network approach for guitar type classification in real time Universidad Autónoma de Baja California, VII Congreso Internacional de Investigación Tijuana. Tijuana, B. C. Mexico. April 25-28, 2022. (Oral Presentation) .
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- Torres, C.; Gonzalez, C.I.; Martinez, G.E. Fuzzy Edge Detection as a Preprocessing Layer in Deep Neural Networks for Guitar Classification. Sensors 2022, 22, 5892. <https://doi.org/10.3390/s22155892>.
- Torres, C.; Gonzalez, C.I.; Martinez, G.E. Traffic Sign Recognition Using Fuzzy Preprocessing and Deep Neural Networks. Studies in Computational Intelligence (SCI, volume 1096). 2023, https://doi.org/10.1007/978-3-031-28999-6_5.
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- Gonzalez, C.I.; Torres, C. Fuzzy Convolutional Neural Network Model Applied to Classification Problems. Cognitive Computing and Advances in Intelligent Systems, CCAIS-2023. November 30 (Oral Presentation).

Experiencia Laboral

- **Sistemas Audiovisuales Tijuana** **Tijuana, Baja California, 2011-2021**
Técnico en audio e iluminación para conciertos y conferencias.
- **Samsung Research Tijuana.** **Tijuana, Baja California, Feb 2023 – actual**
Machine learning Engineer/Research Engineer.
Resarch engineer en equipo de prueba de concepto (PoC), trabajando en problemas con Aprendizaje maquina/vision por computadora utilizando modelos del estado el arte orientados a inovaciones en productos de Samsung.

Habilidades Técnicas.

- **Lenguajes de programación.**
Python, MATLAB, Java, C++, C#, JavaScript.
- **Machine Learning/ Deep Learning Frameworks**
TensorFlow, PyTorch, Sci-Kit Learn.

- **Tecnologías**
OpenCV, NumPy, Pandas, Nvidia CUDA Toolkit, Docker, Keras, Windows subsystem for Linux.
- **Sistemas Operativos**
Linux (Ubuntu, Debian, RaspbianOS, PopOS). OSX y Windows.

Premios

- **Proyecto destacado:** Feria de proyectos de ingeniería, Cetys Universidad 2019.
- **127vo Lugar:** Maratón Behind the code 2020 por IBM (Mas de 50,000 participantes en América Latina)
- **1er Lugar:** AI Hackathon por AiLabSchool 2022 patrocinado por Microsoft.

Areas de Investigación de interes

Mi intereses de investigación abarcan las siguientes áreas:

- Visión computacional.
- Redes Neuronales Convolucionales.
- Aprendizaje profundo.
- Aprendizaje Maquina.
- Visual Transformer Models.
- Large Language Models (LLM).
- Generación sintética de imágenes.