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Education

Universidad Autónoma de San Luis Potosí

B.E. in Intelligent Systems Engineering GPA: 85/100 [3.3]

Expected Dec 2026

San Luis Potosí, México

- **Relevant Coursework:** Data Structures and Algorithms, Operating Systems, Databases, Software Engineering, Machine Learning, Computer Networks.

Experience

Institut National de la Recherche Scientifique

Research Engineering Intern

May 2025 – Aug 2025

Montréal, QC, Canada

- Built end-to-end ETL pipeline processing 6,000+ FIFA/EPL match statistics across 380+ matches per season, automating weekly performance predictions and match outcome analysis for sports analytics platform.
- Engineered data preprocessing pipeline using **NumPy** and **pandas** to clean and transform web-scraped datasets, implementing probabilistic rating algorithms for team performance evaluation.
- Deployed automated reporting system integrating **Google Drive API** and **WordPress**, delivering weekly updated interactive visualizations and predictions to platform users.
- Technologies: **Python, NumPy, pandas, matplotlib, Selenium, BeautifulSoup4, PyDrive, gspread.**

Centro de Investigación y Estudios de Posgrado de la Facultad de Ingeniería

Research Engineering Intern

Jan 2025 – Jun 2025

San Luis Potosí, México

- Developed CNN-LSTM machine learning pipeline for early Parkinson's disease detection through speech analysis, preprocessing 81 audio samples and extracting acoustic features using **Librosa** for diagnostic classification.
- Designed and evaluated deep learning architectures in **TensorFlow/Keras**, conducting hyperparameter tuning experiments and comparing model performance across multiple architectures for medical diagnostic applications.
- Technologies: **Python, TensorFlow, Keras, Librosa, NumPy, pandas, matplotlib.**

Leadership & Entrepreneurship

Mariaca Restaurant Mx

Technology Lead

Apr 2021 – May 2025

San Luis Potosí, México

- Led end-to-end digital transformation, implementing POS system, local network infrastructure, and real-time operational tracking across multiple business units.
- Contributed to 10x business growth over 4-year period through data-driven decision making and process optimization; grew social media engagement by 400% through targeted digital marketing strategy.
- Technologies: **Power BI, Microsoft Office, Adobe Creative Suite.**

Projects

CiComp Overflow

- Developed full-stack collaborative platform for Computer Science students using **React** and **Next.js**, implementing responsive UI components and user authentication.
- Built **RESTful API** supporting CRUD operations for posts, comments, and user management; containerized application with **Docker** for consistent deployment across environments.
- Collaborated in Agile development team using **Scrum** methodology, managing sprints and project workflows through **Azure DevOps**.

Music Genre Classification

- Implemented CNN-based audio classification system on GTZAN dataset (1,000 samples), extracting MFCC features using **Librosa** to capture spectral characteristics for genre recognition.
- Developed and compared MLP vs CNN architectures in **TensorFlow/Keras**, achieving 73% accuracy with CNN architecture a 32% relative improvement over baseline MLP model.

Lie Detection Using Facial Recognition

- Processed real-life trial videos using **OpenCV** to extract facial expressions and prepare sequential data for deception pattern analysis.
- Applied transfer learning with InceptionV3 and LSTM networks in **TensorFlow/Keras** to classify deception patterns from facial microexpressions.