Angel Toledo Flores

Software Developer / IA Developper

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Professional Summary

- With over +5 years of experience in developing and researching Machine Learning solutions for specific problems in areas of Computer Vision (CV), Optical Character Recognition (OCR), Natural Language Processing (NLP), Assistant with Langue Language Model (LLM) and Statistical Analysis, I have solid knowledge in key technologies and have worked with companies in the industry to implement effective and efficient solutions.

Technical Skills

• Python Development • Matlab for mathematics • Cloud with AWS, Azure,, GCP • API Development	• LLM integrations (gpt, llama 2, deepseek). • Machine Learning and Deep Learning with TF, Keras, Pytorch • Statistical Analysis

Work Experience

Software Developper Sr , SNGULAR June 2023 - Present

- Built AI assistants and autonomous agents with LLaMA 2, GPT-4, Mixtral, and DeepSeek for sales opportunity detection.
- Led the development of a molecule recommendation engine using statistical models and business rules; leveraged LLMs to interpret client needs and translate them into actionable recommendations.
- Delivered a predictive LLM-based system for forecasting pharmaceutical shortages.Technologies: Python, LLMs, AWS, Azure, GCP, GPT-4, LLaMA 2, DeepSeek

Skills: Machine Learning, Python Developer, AWS, Azure, GCP, Gpt-4, Mixtral, Llama2, LLM.

Teach Lead Machine Learning (Contractor), ADEA June 2023 - October 2023

- Led the development of a secure document classification system using deep learning and OMR for identity document processing.
- Designed and deployed OCR pipelines with NLP-based categorization, improving productivity.
- Supervised a team of 3 engineers and ensured compliance with data protection standards.
- Achieved 85% classification accuracy (vs. 65% baseline) and reduced processing time by 90%.Technologies: OCR, OMR, NLP, Python, Deep Learning, API

Skills: Machine Learning, Python Developer, Computer Vision, OCR, OMR, Deep Learning, Lead.

Teacher Data Science, UTEL - UCAMP. January 2023 - July 2023

- Delivered comprehensive instruction on data science fundamentals, covering data analysis, visualization, and machine learning workflows. Mentored students in building impactful portfolio projects aligned with industry standards.

Profesor Computer Vision,Space Foundation. June 2023 - July 2023

- Delivered foundational training on CV concepts applied to the space industry, including the development of a crater detection system for autonomous planetary rovers.

Machine Learning Engineer, Emergys. January 2022 - June 2023

- Developed software using Optical Character Recognition (OCR) and Natural Language Processing (NLP) for document review and validation.
- Leading a software development team creating the workflow, establishing standardization of practices and creating the software architecture.d
- Helping in the sizing of technologies, time estimation, technical resources, architecture and personnel of new machine learning projects.

Skills: Machine Learning, Python Developer, OCR, NLP, Leading, Testing, MLOps, Computer Vision.

Computer Vision Engineer, Lingodub. January 2021 - January 2022, Covent Garden, London.

- Developed and evaluated multiple object detection, classification and segmentation models for market research in the construction industry using YOLO, detectron2, Faster in Python and AWS.
- Creation of API using postman for machine learning model deployment
- Analysis, cleaning, and labeling of data for machine learning model training.

Skills: Computer Vision, Machine Learning, Deep Learning, Object Detection, Classification, Segmentation, Python, AWS, LabelImg, Jupyter Notebook, Anaconda, Postman, Keras, Tensorflow, Pythorch.

Machine Learning Researcher, **Center for Automation and Robotics (UPM-CSIC).** February 2020 - December 2021, Madrid, Spain.

- Led research on machine vision for precision agriculture, including automatic weed classification, spatial crop analysis, and ISOBUS-integrated smart spraying systems. Achieved over 90% classification accuracy using RetinaNet and deep learning models (Keras, TensorFlow).
- Integrated robotic control via ROS and authored peer-reviewed scientific work.
- Worked with Robotic Operating Systems (ROS) for teleoperation of autonomous vehicles using ROS, Matlab.
- Writing of scientific articles and creation of posters for scientific congresses.

Skills: Computer Vision, Machine Learning, Deep Learning, Object Detection, Classification, Segmentation, Python, AWS, LabelImg, Jupyter Notebook, Anaconda, ROS, Keras, Tensorflow, Pythorch.

Science Contributions

- MULTI-CLASS WEED DETECTION AND CLASSIFICATION SYSTEM FOR TOMATO (*Solanum lycopersicum L.*) USING NEURAL NETWORKS. Angel TOLEDO, Juan LÓPEZ CORREA, Dionisio ANDÚJAR. CLAP 2022.
- USING COMPUTER VISION AND RGB IMAGES TO QUANTIFY PLANT SPATIAL DISTRIBUTION IN CORN. Villa S, Toledo Angel, Lopez-Correa, Peralta-Cuquejo R, Balboa, G. CLAP 2022.
- OBJECT DETECTION-BASED NEURAL NETWORKS FOR WEED MANAGEMENT . Juan Manuel López Correa, Angel Toledo Flores, Orly Enrique Apolo, Dionisio Andujar. CLAP 2022.
- INTELLIGENT WEED TREATMENT BY ISOBUS BASED ON AUTOMATIC RECOGNITION IN TOMATO CULTIVATION. Juan López-Correa, Angel Toledo, Dionisio Andújar. SHIBIH 2022.

Education

- **Master´s degree in Computational Science and Applied Mathematics**. International University of la Rioja (UNIR) Spain (In progress) 2022- 2025.
- **Computer System Engineering**. Virtual University of the State of Guanajuato (UVEG) Mexico (In progress) 2020 - 2025.
- **Agricultural Mechanical Engineer.** Chapingo Autonomous University (UACh) Mexico. Degree (Graduated by academic merit) 2017-2021.
  - **Mechanical Engineer.** Pontificia Bolivariana University (UPB) Colombia. Academic Exchange (2019).