

HECTOR ANDRES MEJIA VALLEJO

Information Technologies Graduating Student

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See my work portfolio at:

<https://hector6298.github.io/my-work-portfolio/> for code samples, publications, projects and certifications.

EXPERIENCE

Junior Data Scientist/Engineer - Nodel

October 2020-Present Day Guayaquil, Ecuador

- Research and development of ML/NLP workflows.
- Construction of pipelines for Big Data/ML processing with Microsoft Azure.
- Review and improvement of existing ML methodologies.

Algorithms Teaching Assistant-Yachay Tech University

March 2020-July 2020 Urcuqui, Ecuador

- In charge of teaching Python to students, grading assignments and providing complementary content about programming in general.

Research Assistant - Universidad de Málaga

February 2020 Málaga, España

- Vehicle speed estimation from single roadside camera captures.
- Deep learning and computer vision algorithms for camera calibration, speed estimation and tracking.

Research Assistant - INAOE

June 2019-July 2019 Puebla, México

- Research on Multi Modal biometric systems.
- EEG/facial features on ML/DL models.

PROJECTS

Vehicle speed estimation from single camera feed

February 2020-Present

- Graduation Project
- Develop deep learning models for vehicle detection, camera calibration and tracking.
- Homography transformation to translate image coordinates to flat world plane.

COVID-19 chest x-rays pattern recognition

May 2020 - Aug 2020

- Submitted two papers on different conferences: TICEC2020, CSEE2020.
- Got 0.98 AUC on classification in 13k chest x-ray dataset with 3 classes: COVID pneumonia, Non-COVID pneumonia, and normal.
- github short sample code:
https://github.com/hector6298/Preprocessing_CNN

Personal Medium Blog about Machine Learning and Cloud Computing

May 2021 - Present

- Profile: <https://hectormreja.medium.com/>

SOFT SKILLS

Hard-working Curious
Motivator & Leader Flexibility
Optimist Self-motivated
Collaborative Oral speaking capability
Eager to learn!

TECHNOLOGIES

Programming and Version Control

Python C/C++ SQL Java Scala
Git Javascript R Matlab

Machine Learning Frameworks

Tensorflow/Tensorflow Lite Keras
OpenCV C++/Python
Scikit-Learn, Scikit-image Rapids-AI
Pytorch

Data/Numerical/Statistical analysis

Numpy Pandas Scipy matplotlib

NLP libraries

Spacy NLTK Gensim
Hugging-face Transformers
Sentence Transformers

Data Engineering

Apache Spark Apache Kafka
Delta Lake Paho MQTT - Python
MPI4Py Snowflake







Cloud Services (Azure)

Storage Machine Learning
Kubernetes Services
Cognitive Services and Custom Vision
Functions Databricks


Web/Mobile Development

HTML, CSS, Javascript Bootstrap 4
flask SQL Alchemy Django
react-native, Expo

LEADERSHIP

-  **2020 IEEE student branch President**
Yachay Tech university's IEEE student branch.
-  **4x Academic Excellence Award**
Given to students with 9.0/10 or more in final grade.
-  **Former president and founder of Yachay Tech Videogame development and Artificial Intelligence Club**
Projects, competitions and seminars for the university community.
github.com/yachay-tech-ai
-  **President of Yachay Tech Bodybuilding and Powerlifting Club**
Seminars, training and competitions for students
-  **2020 IEEE Hacktech COVID finalist**
One of the 15 finalists out of more than 2000 projects. Our proposal was a covid-19 anomalies detector on lungs using x-rays and AI.
-  **Organizing member of three Programming competitions at Yachay Tech**

PUBLICATIONS

-  **Conference Proceedings**
 - Carrion, Dustin et al. "A method for studying how much time of EEG recording is needed to have a good user identification." In: *Proceedings of the 6th IEEE Latin American Conference on Computational Intelligence, Guayaquil, Ecuador, 11-15 November 2019*. Institute of Electrical and Electronics Engineers.
 - Mejia, Hector et al. "Pre-processing and Handling Unbalanced Data in CNN for Improving Automated Detection of COVID-19 Cases: Preliminary Results. Accepted Manuscript". In: *Communications in Computer and Information Science (CCIS)*. Springer.
 - David Freire, Jonathan et al. (2021). "The Impact of Histogram Equalization and Color Mapping on ResNet-34's Overall Performance for COVID-19 Detection". In: *2021 4th International Conference on Data Storage and Data Engineering*. DSDE '21. Barcelona, Spain: Association for Computing Machinery, pp. 45–51. ISBN: 9781450389303. DOI: [10.1145/3456146.3456154](https://doi.org/10.1145/3456146.3456154). URL: <https://doi.org/10.1145/3456146.3456154>.

COURSES AND CERTIFICATIONS

Data8.2x Foundations of Data Science: Inferential Thinking by Re-sampling

U.C Berkeley Edx.org

 June 2018

Deep Learning with Tensorflow

Cognitive Class.AI

 January 2018

Spark Fundamentals I and II

Cognitive Class.AI

 September 2020

Snowflake for Developers

Udemy

 September 2021

RELEVANT COURSEWORK

Machine Learning Linear Models
Probability and Statistics
Programming (In C) Algorithm Analysis
Databases Logic Linear Algebra
Calculus Differential Equations
Algorithms Numerical Analysis
Operating Systems
Computational Complexity
High Performance Computing
Web Programming
Computer Networks
Software Engineering Discrete Math
Image Processing
Multivariate Statistical Analysis
Neural Networks

LANGUAGES

English 

Spanish 

EDUCATION

B.Sc. in Information Technologies

Yachay Tech University

 Sept 2016 – Present  Urcuqui, Ecuador

Expected date of graduation: September 2021

High School Diploma

Unidad Educativa Liceo Naval de Guayaquil

 2010-2016  Guayaquil, Ecuador

REFEREES

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