Ángel Encalada

Data Scientist

Martha de Roldós, Street 18D Block 320 House 8
090601 Guayaquil
Ecuador
+593 (9) 6824 1178
angaenca@espol.edu.ec
angelencalada.netlify.app

About me

Highly dedicated student with experience in Computational Modeling, Autonomous Flight Engineering, Natural Language Processing and Machine & Deep Learning applied to Structural Health Monitoring. Strong leadership skills proven through involvement in academic events and recognition awards. Seeking a position as a data scientist or mechatronics engineer to continue career growth into working life.

Research Interests

Mechatronics Design, Machine & Deep Learning, Structural Health Monitoring and Renewable Energy

Education

2016–Present **B.Sc. in Mechatronics Engineering**, *ESPOL Polytechnic University* , Guayaquil.

2010–2016 **B.Tech. in Electrical Installations, Devices and Machines**, *College of Baccalaureate "Jambelí"*, Ecuador.

Experience

Feb 2020 – Present **Mechatronics Design Assistant**, *MELACORP S.A.*, Guayaquil.

Activities include:

- PLC programming and simulation.
- Hosting databases and linking with mobile apps.
- Deploying industrial communication interfaces by using Node-RED.
- Developing a mobile app based on UX/UI protocols.

Oct 2019 – Present **Researcher**, *ESPOL Polytechnic University*, Guayaquil.

Activities include:

- Reviewing literature about wind turbines fault detection and unbalanced data.
- Developing machine

& deep learning models, such as, NN, SVM, KNN, XGBoost to predict pre-faults in wind turbines.

May 2019 – Oct 2019 **Researcher**, *ESPOL Polytechnic University*, Guayaquil.

Activities included:

- Reviewing literature about commercial activity impact for mobility characterization in cities.
- Developing machine learning models to correlate commercial activity index with mobility patterns at intra-urban level.

May 2019 – Feb 2020 **Researcher**, *ESPOL Polytechnic University*, Guayaquil.

Activities included:

- Reviewing literature about network topology fault prediction.
- Reviewing literature about body posture classification since oral presentations.
- Developing machine learning models for fault detection in network topology.
- Developing deep learning models for oral presentation qualification since body postures.

May 2019 – Present **Academic Instructor**, *ACPrime*, Guayaquil.

Activities include:

- Teaching about beam and column deflection, mechanical stress, Mohr's circle, forces and moments, etc.
- Teaching about AC/DC motors, three and mono phase circuits, transformers, magnetic circuits, etc.

May 2019 – Oct 2019 **Teaching Assistant**, *ESPOL Polytechnic University*, Guayaquil.

Activities included grading evaluations and tasks and teaching Python programming.

Feb 2018 – Present **Researcher**, *LabFREE (Energy Renewable Sources Laboratory)*, Guayaquil.

Activities include:

- Reviewing literature about mechanical properties improvement of GDLs into fuel cells.
- Developing computational modeling systems for transport phenomena study on porous media.
- Writing scientific articles.

Certifications

Dec 2018 **Web Data Analytics, Mining User Opinions**, *Mobile & Web Technologies and Data Science Research Club, ESPOL*, Guayaquil.

Text processing of datasets based on social media, e.g. Twitter. Sentiment analysis applied on social media content.

Oct 2018 **Papers elaboration and LaTex document system application**, *Faculty of Engineering Earth Sciences, ESPOL*, Guayaquil.

Academic course about general structure of research papers and administration and elaboration of different kind of documents on LaTex platform.

Knowledge Area

Mar 2020 **Natural Language Processing**, *Udacity*.

Learn cutting-edge natural language processing techniques to process speech and analyze text. Build probabilistic and deep learning models, such as hidden Markov models and recurrent neural networks, to teach the computer to do tasks such as speech recognition, machine translation, etc.

Oct 2019 **Flying Car and Autonomous Flight Engineer**, *Udacity*.

Learn the core concepts required to design and develop robots that fly. Work with the quadrotor test platform and our custom flight simulator to implement planning, control, and estimation solutions.

Skills

Python, Android Studio, Arduino, Autodesk Inventor, Autodesk AutoCAD, MATLAB

Languages

Native Spanish

Intermediate English

Involvement

May 2019 – Present **Club Member**, *Mechatronics Club*, ESPOL Polytechnic University.
Research projects related to Robotics, Automation and Electronics. Activities of links with society.

Oct 2018 – Present **Club Member**, *ROBOTA Robotics Club*, ESPOL Polytechnic University.
Robotics competitions oriented to battle robots, line tracker robots, maze robots, LEGO creativity, etc.

Jun 2018 – Feb 2019 **Academic Vice-President**, *Mobile & Web Technologies and Data Science Research Club (TAWS)*, ESPOL Polytechnic University.
Projects related to Artificial Intelligence, Data Science and IoT.

Awards

Dec 2019 **1st Place I+D+i Category: Recognition of Science, Technology and Innovation Initiatives and Ancestral Knowledge**, *Organization of Ibero-American States for Education, Science and Culture (OEI) & Secretariat for Higher Education, Science, Technology and Innovation (Senescyt)*, Ibarra.
Partipation of Transport Phenomena Research Group at the first National Meeting of Networks and HUB of Technology Transfer where results about Fuel Cells research were presented.

Nov 2019 **Best Oral Presentation Finalist: Ecuadorian Network of Universities for Research and Postgraduate Studies Congress**, *Yachay Experimental Technology Research University*, Ibarra.
Oral Presentation titled: "Pore Network Modelling: Importancia del Modelamiento Computacional para la mejora de las Propiedades Mecánicas en Celdas de Combustible".

Jan 2018 **1st Place: Hackathon GeoViz Challenge 2017**, *Mobile & Web Technologies and Data Science Research Club, TAWS*, Guayaquil.
Massive data analysis and interactive visualizations design for data interpretation.

Publications

2020 **A Permeability–Throat Diameter Correlation for a Medium Generated with Delaunay Tessellation and Voronoi Algorithm**, with (J. Barzola & M. Espinoza), *Transport in Porous Media*. Available here.

2019 **Digital Transactions Mining to Characterize Temporal Rhythms of a City**, (with C. Orellana, C. Vaca, J. Gorotiza & N. Pilco), *Conference Proceedings of the 6th International Conference on eDemocracy and eGovernment, ICEDEG 2019*. Available here.

References

Mayken Espinoza, Ph.D., Associate Professor, Transport Phenomena Research Group Director. Tel: (+593) 9 9186 2444. E-mail: masespin@espol.edu.ec

Christian Tutivén, Ph.D., Associate Professor, Faculty of Mechanical Engineering and Production Science. Tel: (+593) 9 5862 1189. E-mail: cjtutive@espol.edu.ec

Carmen Vaca, Ph.D., Associate Professor, Big Data Research Group Co-Director. Tel: (+593) 9 6732 0047. E-mail: cvaca@espol.edu.ec