CRISTIAN ALEXIS MURILLO-MARTÍNEZ

Engineer and Developer with experience programming mainly on Python running under Windows and Linux OS. Applications in the Oil & Gas industry, providing innovative smart solutions for businesses using commercial, and open-source software. Developed websites using monolithic and microservice architectures. Involved in projects regarding data analysis, visualization, process automation, and integration. Passionate about data science, ML, and web development. I regard myself as a self-driven person with a growth mindset who strives for excellence and is eager for knowledge.

Contact Info

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WORK EXPERIENCE

Backend Developer at KatapultCommerce (Formerly Mi Águila).
04/2022 – 06/2022. Backend developer.
- Software Development, Refactoring, Debugging, Unit-testing.
- Agile methodology (Scrum – Kanban).

Process Engineer and Python Specialist at Wood PLC.
06/2021 – 03/2022. Hydraulic Network Modeling and Analysis using Python.
- Process automation using Python to link PIPESIM with Excel.
- Statistical-based analysis of oil production forecasts and evaluation of operational scenarios to propose strategies to increase oil production by 30% considering time and technical constraints.
- Report writing and Presentation.

Engineering and Consultancy at TIP – Ecopetrol S.A.
02/2019 – 05/2021. Geophysical modeling & Software development using Python.
- Analysis of velocity models and seismic data using numeric and data visualization libraries in Python.
- Methodology and metrics to estimate the effectiveness of different seismic acquisition configurations prior to field deployment. Thus, increasing the Benefit-Cost Ratio.
- Development of a Python library for the comparison of geophysical data.
- Design and implementation of an algorithm for the computation of detectability and location uncertainty maps, using a *Back-Projection Imaging (BPI)* method.
- Review and integration of *open-source* software packages for dynamic ray tracing (including Seismic Unix and Madagascar).
- Evaluation of plausible network configurations for business decision-making.

Graduate Student Researcher at Universidad Industrial de Santander (UIS).
09/2016 – 08/2018. MSc Thesis.
- Implementation of a new centroid-based Back-Projection Imaging method for seismic event location. Developed in Python y MatLab.
- Sensitivity analysis (Monte Carlo simulation) of the spatiotemporal location of seismic events, using the fast-marching method for efficient computation of traveltime tables.
- Confusion matrices and Receiver Operating Characteristic curves for effective decision-making.
- Time series analysis. Application to real data.

Part-time Professor at Universidad Industrial de Santander (UIS).
03/2017 – 08/2019. Laboratory of Physics (Mechanics)
- Guiding students to develop critical thinking through theory and lab experiments.

Work & Travel Exchange Program for J1 Students in the USA.
05/2015 – 09/2015, TX, USA Server / Waiter at Golden Corral of Galveston, TX.
- Working in a multicultural team providing customer service.

TECH. SKILLS

Windows | Linux (Ubuntu)
Python | Java | MATLAB
Web Development | Django
Django Rest Framework | SQL
Web Scraping | M. Excel
Data Analysis | Tableau
Machine Learning | Data Science

Soft Skills

Time management | Teamwork
Detail-Oriented | Innovation
Problem-Solving | Adaptability
Passion to Learn | Self-Driven
Communication | Mind-Growth

Other technologies

Git | GitHub | Heroku
Jira | Scrum | VSCode
Pycharm | Jupyter Notebook
Postman | Mongo | Docker

LANGUAGES

Spanish
English
Portuguese

EDUCATION

- **MSc in Geophysics.** UIS - 2019. Bucaramanga, Colombia.
- **Bachelor's degree in Petroleum Engineering.** UIS – 2016.

COMPLEMENTARY EDUCATION

- **Data Science for All – Cohort 6. Graduated with honors (375h)** Apr – Jul/2022. Correlation One – Colombian Ministry of ICT. **Tech Stack:** Python, Pandas, Sklearn, Matplotlib, Seaborn. **Skills:** data cleaning, data analysis, data visualization, machine learning.
- **Programming and software development (800h)** May – Dec/2021. **Focus: Web Development.** Continuing Education Certificate. Universidad Nacional de Colombia – Colombian Ministry of ICT. **Tech Stack**: Python, Django, DRF, Java, SpringBoot, JavaScript, VueJS, GraphQL, MySQL, PostgreSQL, MongoDB, Git, Heroku, Docker, Postman.
- **SQL desde cero a experto.** a2capacitacion. Mar/2022. **Tech Stack**: MySQL.
- **Python for Data Science and Machine Learning.** Udemy. Dec/2021. **Tech Stack**: Scikit-learn, Pandas, Numpy.
- **Machine Learning.** Coursera. Stanford University Online. Feb/2021. **Tech Stack**: MatLab. Models: Multi-Linear Regression, Logistic Regression, Multiclass Classification, Neural Networks, SVM, K-means, PCA, Anomaly Detection.

PORTFOLIO PROJECTS

- **Website using a monolithic architecture**. Flight booking website. **Tech Stack**:
  - *BE.* Python, Django, Django Rest Framework, Postman. *DB.* PostgreSQL.
  - *FE.* HTML5, CSS, Vue.js.
  - *Deployment.* Heroku, Git.
- **Website using microservice architecture**. Online Tech Store. **Tech Stack**:
  - *MS1*. Python, Django – DRF. *DB.* PostgreSQL.
  - *MS2*. Java – Spring Boot. *DB.* MongoDB.
  - *API Gateway*. GraphQL – Apollo Server.
  - *FrontEnd*. HTML5, CSS, Vue.js.
  - *Deployment*. Docker and Heroku.
- **Desktop app**. CRUD on "books' authors" table. **Tech Stack**:
  - *BE.* Java. *DB.* MySQL. *GUI.* Java Swing.
- **Web Scraping.** Properties on Sale in Santander – Colombia. **Tech Stack**: BeautifulSoup, Pandas, Matplotlib, Seaborn.
- **EDA and Dashboard.** Covid19_Pandemic. **Tech Stack**: SQL Server, Tableau.
- **Dash app.** Credit risk prediction. **Tech Stack:** Python – Dash, HTML, CSS.
- **Others**

PAPERS & PUBLICATIONS

- Murillo Martínez, C. A., & Agudelo, W. M. (2021). Sensitivity analysis of the backprojection imaging method for seismic event location. CT&F - Ciencia, Tecnología Y Futuro. https://doi.org/10.29047/01225383.167
- Murillo Martínez, Cristian A.; Agudelo, William (2019). "PbAS – A 4D centroid-based method for location of complex waveform seismic events". Sociedade Brasileira de Geofísica. DOI: 10.22564/16cisbgf2019.341. Ext. Abstract.
- Murillo, C. A., et al., "Application of Adsorption Isotherm Models of Methane on a Shale Sample and Their Impact on Reserves Estimation" (2015). Fuentes: El Reventón energético. Vol. 13. UIS. https://doi.org/10.18273/revfue.v13n2-2015012

Oral Presentations

- "PbAS – A 4D centroid-based method for location of complex waveform seismic events". In the 16th international congress of the Brazilian Geophysical Society. (Brazil, 2019)
- "Evaluación De La Localización De Eventos Sísmicos Tipo Tremor En Condiciones Realistas Simuladas" En "Semana Técnica de Geología, Geociencias e Ingeniería Geológica" – Universidad de Caldas. (Colombia, 2018)