Juan Diego Dumez

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Education

Northeastern University, Khoury College of Computer Sciences — Boston, MA
Master of Science in Computer Science **GPA:** 4.0/4.0 — *Sep 2022 – Dec 2024*

Universidad de America — Bogota, COL
Bachelor of Science in Petroleum Engineering **GPA:** 4.59/5.0 (92%) — *Jul 2013 – Nov 2019*

Universidad de los Andes — Bogota, COL
Bachelor of Science in Geosciences **GPA:** 4.52/5.0 (90%) — *Jul 2014 – Jul 2019*

Relevant Coursework: Foundations of AI, Machine Learning, Database Management Systems, Web Development, Mobile App Development, Algorithms, Reservoir Simulation, Modeling & Numerical Analysis

Awards: Khoury Research Apprenticeship, Colfuturo Scholarship, First Place PetroBowl Championship, Ramon de Zubiria Distinction, Academical Excellence Distinction

Technical Skills

Programming Languages: Python, SQL, C/C++, Java, JavaScript, MATLAB, HTML, CSS, R, VBA
Technologies: React, Flask, Dash, Django, Node.js, Express.js, Redux, MongoDB, MySQL, Spring, Spark, Hadoop
Tools: Git/GitHub, PowerBI, Tableau, JIRA, Visual Studio, VS Code, PyCharm, IntelliJ, Microsoft Office
AI/ML Frameworks: PyTorch, Scikit-learn, Keras, TensorFlow, PySpark
Reservoir Engineering Software & Tools: CMG, Petrel, Interactive Petrophysics, Techlog, FracMan

Experience

Software Engineer - Color Image Scientist Co-Op — Jan 2024 – August 2024
E Ink Corporation — *Billerica, MA*
- Developed an internal web application to optimize ePaper panel development using Flask, Django, and Dash reducing development time by 30%.
- Debugged and configured ePaper demo unit software drivers using Python, improving performance by 25%
- Developed a standalone software application with a custom GUI for color measurement and waveform analysis, reducing setup time by 30%

Khoury Research Apprentice — Sep 2023 – Dec 2023
Northeastern University — *Boston, MA*
- Developed and maintained the 3DSceneGraph-API using Neo4j, GraphQL, and Apollo Server, enabling advanced 3D scene analysis and data manipulation for urban development and virtual navigation applications

Petrophysicist - Data Scientist — Mar 2020 – Jul 2022
Drummond Energy — *Bogota, COL*
- Reduced costs by 30% and rock classification time by 50% by developing ML models in Python for predicting sonic well logs and rock classification, eliminating the need for expensive tools
- Enhanced subsurface data management for various reservoirs, improving data accessibility by 35% through SQL/NoSQL databases and Python
- Performed petrophysical characterization of Unconventional, Naturally Fractured and Coalbed Methane Reservoirs
- Led Agile practices as Scrum Master for a team of 11 contributors, improving project efficiency and collaboration

Projects

Geological Facies Modeling with Progressive Growing GANs | *Python3, PyTorch, Pandas, TensorFlow*
- Trained a progressive growing GAN to generate synthetic geological facies models, progressively increasing resolution from 4×4 to 64×64 , achieving realistic spatial continuity and facies diversity.

Pokémon Battle AI using Deep Q-Learning | *Python3, PyTorch, Gymnasium*
- Implemented a dueling deep Q-network with experience replay to optimize battle strategies in a custom Pokémon Showdown environment.

Sonic Well Logs Prediction | *Python3, Apache Spark, PySpark, Pandas*
- Developed scalable ML models using Spark and PySpark to predict P/S wave transit times with statistical feature engineering.