Margot Dupont

MSc Geology | Geophysics | GIS | Analytics

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SKILLS

Geology: economic geology, structural geology, petrography, petrophysics, mineralogy, mapping.
Geophysics: Geosoft Oasis Montaj, Res2DInv, Maxwell, ENVI.
3D geo-modeling: Leapfrog, Surpac, Geomodeller, Coralis, Petrel.
GIS: ArcGIS (spatial analysis, model builder), QGIS (Grass), Python for Geographic Information Systems.
Programming: Python (NumPy, Pandas; FP/OOP), R, SQL, NoSQL databases, RegEx, Linux shell, Git.
Analytics: data modeling and visualization, machine learning, forecasting, time series analysis, ETL.
Others: CAD, MS Office (Excel, Access), bilingual French / English.

EXPERIENCE

Ideon Technologies, Vancouver (Canada) - **Geologist/Geophysicist**

NOVEMBER 2021 - NOW (1+ YEAR)

Startup pioneering in density imaging using muon tomography and multi-geophysics inversion.

- Developed software (Python) for quality control, analysis, and interpretation of muon tomography data.
- Designed a data processing pipeline for automatic reporting of imaging results.
- Understood the Client's needs, and designed muon tomography surveys for mining exploration and geotechnical applications (contributed to bring in $1.5M in new contracts).
- Educated clients about the advantages and limits of muon tomography, delivered monitoring updates, and imaging results. Represented the Company as the Client's main technical contact.
- Designed and deployed a centralized documentation platform for ongoing projects, trained users.
- Monitored sensors remotely (connectivity, sensor health, sensor efficiency).
- Managed a team of 3 for the deployment of downhole sensors in the field (Abitibi, QC).

Orano Canada, Saskatoon (Canada) - **Geophysicist**

MARCH 2017 - OCTOBER 2021 (4+ YEARS)

Canadian subsidy of a major player in Uranium ore exploration and production (500+ employees).

- Interpreted geophysical data for the detection of unconformity-related Uranium deposits.
- Advanced processing (derivative products, edge detection, spectral analysis) on potential field data.
- Processing of electromagnetic (ground and airborne EM) data and interpretation of graphitic conductors.
- Developed GIS/Geophysics processes and products for data driven methods (R&D).
- Automated geophysics processes, decreasing processing time and increasing reliability.
- Compiled 200+ Magnetic and Electromagnetic datasets, covering most of the Athabasca Basin.
- Communicated and presented results, contributed to technical reports.
- Complied with health, safety and environment standards.

Society of Petroleum Geologists (SPE) and Untapped Energy - **GTX Competition 2021**

MAY 2021 - JUNE 2021 (1 MONTH)

- Winning team ($5,000 prize, team of 4, 220+ participants).
- Combined machine learning, data analysis, and domain knowledge.
- Predicted the temperature at the end of 800+ oil wells.
- Presented a business case for the exploitation of abandoned oil wells for energy production.

Video presentation, code and documentation available online.

Orano Mining, Paris (France) and Saskatoon (Canada) - **Geoscience co-op**

APRIL 2016 - AUGUST 2016 (5 MONTHS)

Major player in Uranium exploration and production (16,000 employees in 3 countries).

- Processed and interpreted magnetic and gravity data sets to improve structural geology models.
- Developed GIS/Geophysics processes for the interpretation of magnetic surveys.

CNRS, Orleans (France) - **Geology co-op**

APRIL - MAY 2015 (2 MONTHS)

Largest fundamental science research agency in Europe (32,000 employees).

- Multidisciplinary research project: characterisation of a fractured basement aquifer.
- Geological mapping (structures, hydrogeology), survey and inversion of resistivity profiles (ERT).
- Organized a geophysics field campaign and supervised an undergraduate student.

Sixense Geophysics, Nanterres (France) - **Geophysics co-op**

APRIL-AUGUST 2015 (5 MONTHS)

Geophysics company (ground, downhole), part of Soletanche-Freyssinet (Vinci Group).

- Geophysical survey, processing, interpretation (GPR, ERT). Shift work in underground operations.

EDUCATION

Georgia Institute of Technology (GeorgiaTech) - **MSc in Analytics**

JANUARY 2021 - NOW

Statistics, business intelligence, machine learning (supervised, unsupervised).

University of Orleans (France) / French Geological Survey (BRGM) - **MSc in Geosciences**

SEPTEMBER 2014 - NOVEMBER 2016

Geology and Geographical Information Systems for Mineral Resources.

- Thesis: Synthesis of geophysical datasets, structural interpretation for the Kiggavik Uranium Project, NU.

Field work:

- Mapping of gypsum layers and resource estimation (Tabernas region, Spain).
- Geological mapping of a polymetallic deposit (Bou Skour mining district, Morocco).
- Geological mapping of metamorphic terranes in alpine domain (Corsica, France).

LaSalle Polytechnic Institute, Beauvais (France) - **BSc in Geology**

SEPTEMBER 2010 - NOVEMBER 2014

General geology, GIS, geophysics.

- Thesis: Characterization of a landslide. Mapping, GIS processing, geophysics, leveling, piezometry.

Field work:

- Geological mapping in the sub-alpine domain (Alpes-de-Haute-Provence, France).
- Geological mapping in sedimentary domain (Bray Anticline, France).
- Applied geophysics for geotechnical applications.

PROFESSIONAL DEVELOPMENT

PGeo Applicant | EGBC | ongoing (2022)

Data Science Training Level 1 & 2 | Orano Mining College | 2019

IBM Data Science certificate | IBM | 2020

      Machine Learning with Python

      Data Visualization with Python

      Databases and SQL for Data Science

      Tools for Data Science

GeoPython | University of Helsinki | 2019

Statistics and R | HarvardX | 2020

PERSONAL INTERESTS

Science, Art, Recreational Soccer