

# Jackie Michel RAFANOMEZANTSOA



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Antananarivo, Madagascar

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## About me

Petroleum Engineering graduate and current Master's student with strong expertise in Artificial Intelligence, Machine Learning, and Data Analytics for oil and gas applications. I am particularly interested in intelligent drilling, wellbore stability, and data-driven optimization, aiming to address real-world challenges in Oil and Gas Well Engineering. Through the CSC Master's Program, I seek to collaborate on cutting-edge research and contribute innovative, sustainable digital solutions in petroleum engineering.

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## Education

### École Supérieure Polytechnique (ESPA)– University of Antananarivo

- Master of Petroleum Engineering | Expected 2025

Drilling and Production Engineering

Reservoir Engineering

Advanced Petroleum Exploration

Bioenergy & New Energy

Research Methodology

- Bachelor of Petroleum Engineering | 2023

Engineering, Industrial & Petrochemical Processes

Petroleum & Mining Geosciences

Social & Environmental sciences

Advanced Math, Physics, Chemistry & Informatics

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## Certifications

### Web and Marketing Development

- Harvard University – CS50x: Introduction to Computer Science | 2025
- Meta – Back-End Developer Professional Certificate | 2025
- Meta – Front-End Developer Professional Certificate | 2025
- Google – Digital Marketing & E-commerce Professional Certificate | 2025

## Data, IA & IoT

- Google – [Data Analytics Professional Certificate](#) | 2025
- University of California, San Diego – [Introduction to Big Data](#) | 2025
- DeepLearning.AI –  
[Neural Networks and Deep Learning](#) | 2025  
[Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization](#) | 2025  
[Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning](#) | 2025  
[Generative AI](#) | 2025
- IBM – [Machine Learning](#) | 2025
- Vanderbilt University – [Prompt Engineering for ChatGPT](#) | 2025
- Orange Digital Center – [Initiation into Artificial Intelligence](#) | 2025
- Transfer Multisort Elecktronik Sp. Z o.o. (TME EDUCATION) – [Arduino](#) | 2022

## Energy

- TotalEnergies Professeurs Associés (TPA) – [Understanding Energy – Refining – Logistic](#) | 2025

## Foreign Language & Communication

- Confucius Institute (University of Antananarivo) – [HSK2, Mandarin Chinese](#) | 2025
  - University of Washington – [Business English Communication Skills](#) | 2025
  - English Language Institute – [English Speaking, High Distinction](#) | 2022
  - Kitan’ny Ho avy – [English Language](#) | 2021
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## Academic Awards

“Vatsim-pianarana RCR” Scholarship Program – Awarded in 2024 for academic excellence and potential in higher education.

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## Research Interests

- Intelligent Oil and Gas Well Engineering
  - Drilling Engineering
  - Drilling Security and Reliability
  - Application of Machine Learning, Deep Learning and Big Data in Drilling Engineering
  - Energy and Geo Informatics
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## Technical & Personal Projects

- **Blow Out Predictor (In Progress, 2025):** Developing an AI-powered web platform to predict drilling incidents using data-driven models.
- **Little Lemon E-commerce Website (October 2025):** Designed a full-stack e-commerce site.
- **IPE M’fampizara (January 2024):** Founded a workshop offering pedagogical, linguistic, and tech support for Petroleum Engineering students at ESPA.

- **Fuel Electronic Sulfur Sensor (August 2023):** Developed a smart sensor for detecting sulfur in hydrocarbons.
  - **Bioplastics Initiative (August 2022):** Designed a sustainable prototype reducing plastic use by 40%.
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## Work Experience

### **Petroleum Engineering Department – Ecole Supérieure Polytechnique, University of Antananarivo**

Research Intern – Drilling Security and Reliability | 2024–Present

- Conducted research on drilling safety, wellbore stability, and reliability analysis.
  - Applied data-driven methods to evaluate operational risks and optimize drilling processes.
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## Leadership & Volunteer Experience

### **Association of Students in Petroleum Engineering – Antananarivo**

Academic Coordinator | 2024

- Led workshops for 50+ students in technical and linguistic subjects.
- Improved student performance and collaboration.

### **Community Health Center, Ambohimangakely**

Volunteer Data Clerk | July 2023

- Managed patient records and supported efficient data handling.
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## Personal Skills

### Languages

- Malagasy: Native
- English: B2 (CEF)
- French: Fluent
- Mandarin Chinese: HSK2
- Spanish: Beginner

### Communication skills

- Public speaking
- Networking, Meetings, Negotiating, Making Presentations

### Marketing

- Search Engine Optimization SEO & Search Engine Marketing SEM
- Google Analytics, Social Media & Email Marketing
- E-commerce – Managing online Stores

## Digital skills

- Programming – C, Fortran, SQL, Python, R, HTML5, CSS3, JavaScript
- Web development:
  - Front-End: React.js, UX/UI Design, Figma, Canvas
  - Back-End: Django, API development, Insomnia
- SQL – SQLite3, MySQL, BigQuery
- Data Science:
  - Data cleaning & preprocessing, Data manipulation & analysis, Data modeling, Data visualization & Storytelling
  - Python – Pandas, Numpy, Matplotlib, Seaborn, Scikit-Learn, TensorFlow, Keras
  - R – Tidyverse (tibble, tidy, readr, purr, dplyr, stringr,forcats, ggplot2)
  - Big Data – Hadoop
- Control Version – Git, GitHub
- IDE – Visual Studio Code, Jupiter notebook, Spyder, Pycharm
- Productivity – Word, Excel, PowerPoint, Access, MS Project
- Drawing – AutoCAD, ArchiCAD, QGIS, ArcGIS, Surfer, PetroMod
- Energy – RETScreen

## Organisational and Managerial skills

- Leadership
  - Problem solving
  - Team work
  - Methodology Agiles (Scrum, Kanban)
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## Memberships

- ASPE - Association of Students in Petroleum Engineering Madagascar | from November, 2020
- YMCA Madagascar in Y-tech club, Y-English club and in Y-Social and Environmental Club | from March, 2022
- SPDF - Speaking Process and Debate Family | from July, 2023