# Mohamed E. BRIKI

**Machine Learning Engineer | Deep Learning for Medical Research**

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## Summary

Biomedical Informatics graduate and Machine Learning professional with research background in medical image analysis, deep learning, and data science. Experienced in designing and evaluating machine learning models for healthcare and biomedical applications. Skilled in academic research, technical writing, and interdisciplinary collaboration.
Keen on advancing AI research for medical applications and contributing to scientific knowledge through rigorous experimentation and publication.

## Education

- **Master's Biomedical Informatics** *Sep 2017 – Nov 2020*
  *University of Abou Bekr Belkaïd Tlemcen* Tlemcen, Algeria
  - Thesis: "Medical Images Classification Based on Deep Features Extraction Exploiting Transfer Learning" - Grade: 17.50/20 (Très Bien)
- **Bachelor's Biomedical Engineering** *Sep 2014 – Jun 2017*
  *University of Abou Bekr Belkaïd Tlemcen* Tlemcen, Algeria
  - Final Project: "Patient Record Management System (PRMS) for Cardiac Surgery Department" - Grade: 15/20 (Bien)

## Thesis and Publications

C=Conference, J=Journal, P=Patent, S=In Submission, T=Thesis

**[T.1]** Briki, M.E. (2020). *Medical Images Classification Based on Deep Features Extraction Exploiting Transfer Learning*. Master's Thesis, University of Abou Bekr Belkaïd Tlemcen, Algeria. Supervised by Prof. Settouti, N and Dr. Bechar, MEA.

## Experience

- **ML Engineer & Data Project Lead** *Jan 2025 – Present*
  *Wessini* Algiers, Algeria, Hybrid
  - Leading the development, optimization, and maintenance of a legal text extraction pipeline.
  - Managing and updating a high-quality legal text database powering "Verdikt"—a legal AI assistant.
- **Machine Learning Engineer** *Nov 2023 – Dec 2024*
  *Wessini* Algiers, Algeria, On-site
  - Designed and developed an efficient text extraction ETL pipeline incorporating text recognition, cleaning, sorting, pattern identification, and data structuring.
  - Implemented a custom sorting algorithm to accurately process multi-column text and preserve original document layouts.
  - Optimized the pipeline to handle both legacy, poorly scanned and native documents.
  - Processed thousands of legal documents with high accuracy, enabling the creation of a robust legal text database.
- **Machine Learning Engineer** *Feb 2023 – Aug 2023*
  *Namla* Orsay, France, Remote
  - Developed end-to-end machine learning solutions for networking, healthcare, and smart city applications.
  - Trained and fine-tuned ML models (XGBoost, VGG16, LSTM, Prophet) with TensorFlow, Keras, and scikit-learn.
  - Built deployable prototype ML applications using Flask and Streamlit.
  - Utilized Docker and Docker Compose and YAML templates for containerization and deployment.
  - Authored technical blogs on Edge Computing and AI, including "Predictive Maintenance" and "Satellite Edge Computing (SEC)".
- **Biomedical Engineer Intern** *Mar 2017 – Apr 2017*
  *CHU Mustapha* Algiers, Algeria, On-site
  - Developed a Patient Record Management System (PRMS) for the Cardiac Surgery department.
  - Inspected and documented operating room equipment and instruments.

## Projects

- **Breast Cancer Classification: Hybrid Deep Learning Approach (Master's Thesis)** *Apr 2020 – Nov 2020*
  *Tools: VGG16, SVM, MLP, Random Forest, INBreast dataset, NumPy, Pandas, Scikit-learn, Keras*
  - Developed a breast cancer classification model combining a fine-tuned VGG-16 CNN for feature extraction and traditional ML classifiers (SVM, MLP, Random Forest) for final prediction
  - Improved upon baseline model (AUC = 0.95) by achieving AUC = 0.98 using SVM, with further performance gains using MLP and Random Forest
  - Trained and evaluated the model on the INBreast dataset using Google Colab; leveraged whole-image mammogram model architecture by Li Shen

## Skills

- **Machine Learning:** TensorFlow, Keras, PyTorch, Scikit-learn, Pandas, NumPy, OpenCV, Matplotlib, Plotly
- **Programming Languages:** Python, MATLAB, SQL
- **Dev Tools & Platforms:** Docker, Streamlit, Git, GitHub, VS Code, Jupyter Notebook, Google Colab, Kaggle Notebooks, Ubuntu
- **Soft Skills:** Problem-solving and creativity, Critical analysis, Team collaboration, Proactive communication, Time management and prioritization, Adaptability

## Certifications & Training

- AWS Machine Learning Fundamentals Nanodegree from **Udacity** *Aug 2024*
- AI Programming with Python Nanodegree from **Udacity** *Feb 2024*
- Data Science & Analytics from **HP LIFE** *Oct 2023*
- Applications of AI for Anomaly Detection from **NVIDIA DLI** *Feb 2023*
- Introduction to Machine Learning from **Anaconda** *Feb 2023*
- Introduction to Python Programming from **Anaconda** *Feb 2023*
- Introduction to SQL from **Anaconda** *Feb 2023*
- Google Cloud Academy from **BambooGeeks** *Jan – Feb 2023*
- AI for Medical Diagnosis from **DeepLearning.AI** *May 2022*
- Google Cloud Digital Leader Training Professional Certificate from **Google Cloud** *May 2022*
- TensorFlow Developer Certificate from **TensorFlow** *Apr 2022*
- Introduction to TensorFlow for AI, ML, and DL from **DeepLearning.AI** *Apr 2022*
- Google IT Support Professional Certificate from **Google** *Apr 2022*
- Fundamentals of Deep Learning from **NVIDIA DLI** *Feb 2022*
- Machine Learning Academy from **BambooGeeks** *Jan – Feb 2022*
- Kickstart your Career in Tech from **BambooGeeks** *Nov 2021*
- MENA 60 Days on Tech Challenge from **Google Cloud** *Nov – Dec 2021*
- IBM Machine Learning Essentials from **IBM** *Nov 2021*

## Volunteer Experience

- **Co-Founder and Former President** *Dec 2015 – Feb 2017*
  *BEI Club*
  - Co-founded the BEI Club, a student organization focused on promoting Biomedical Engineering and Informatics
  - Organized seminars and events to enhance students' knowledge and skills in the field
  - Led regular meetings with club members to discuss potential projects and initiatives

## Competitions

- **Hult Prize OnCampus Competitor** *Dec 2018*
  *Hult Prize Foundation*
  - Competed in the first-ever edition of the Hult Prize held in Algeria
  - Proposed a nonprofit e-learning platform aimed at strengthening Africa's educational ecosystem

## Additional Information

**Languages:** English (Fluent, EF SET C2), French (Conversational, TCF B2), Arabic (Native)