Rodwan Bagdadi

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Education

German Jordanian University **July 2025**
Bachelor of Mechatronics and AI Engineering *Madaba, Jordan*

Bochum University of Applied Sciences **Sep 2023 – Mar 2024**
Exchange Semester *Bochum, Germany*

Work Experience

Bosch Engineering GmbH **Mar 2024 – Sep 2024**
Software Engineering Intern *Abstatt, Germany*

- Developed and optimized **machine learning models** using **Ensemble Learning** and **Random Forests** in **Python**, achieving **top 20%** performance on Kaggle competition through advanced feature engineering and model optimization techniques
- Implemented advanced **state estimation systems** using **Kalman Filters** in **MATLAB** and **Python**, demonstrating proficiency in both linear and non-linear system modeling for real-time applications
- Applied **prompt engineering** techniques with internal **GPT-3.5 Turbo** models, conducting systematic evaluations and optimizations to maximize AI model performance

Projects

Fake News Detection System | *Graduation Project* **Flask**| ***XGBoost***| ***BERT***

* Built an end-to-end **NLP pipeline** using **TF-IDF vectorization** and **XGBoost** classifier, achieving **92%+ accuracy** on fake news detection with comprehensive preprocessing and feature extraction
* Integrated **DistilBERT transformer model** from **Hugging Face** for advanced text classification, leveraging pre-trained embeddings and fine-tuning techniques to capture nuanced linguistic patterns
* Developed ensemble approach combining multiple ML algorithms (**SVM**, **LightGBM**, **Random Forest**, **Logistic Regression**) with consistent **90%+** precision and recall across models
* Deployed scalable web application using **Flask** backend and **HTML** for frontend for real-time prediction capabilities

Business Intelligence Analytics Platform **Power BI**| ***MySQL***| ***Python***| ***DAX***

* Engineered comprehensive **data pipeline** connecting **MySQL** databases to **Power BI** dashboards, implementing automated data preprocessing and currency normalization for multi-regional analysis
* Applied **statistical analysis** and **pattern recognition** to identify key business insights including **Pareto principle** validation (top 20% customers = 80% revenue)

Diabetes Classifier **Python**| ***SVM***| ***Scikit-learn***| ***Pandas***

* Developed robust **binary classification model** using **Support Vector Machine** on healthcare dataset of **70,692 processed samples**, achieving **74.92%** accuracy through systematic data cleaning and feature selection
* Conducted comprehensive **model benchmarking** across 4 algorithms (**SVM**, **KNN**, **Random Forests**, **Decision Trees**), implementing cross-validation and hyperparameter tuning to prevent overfitting

Technical Skills

Programming Languages: Python, MATLAB, HTML, SQL
AI/ML Frameworks: PyTorch, TensorFlow, Scikit-learn, Hugging Face
Data Science Libraries: Pandas, NumPy, Matplotlib, Seaborn
Development Tools: Git, VS Code, Flask, FastAPI
Databases & Systems: MySQL, Power BI
NLP & ML Concepts: Text Classification, Feature Engineering, Model Optimization, Ensemble Methods
Languages: Arabic (Native), English (Fluent), German (Intermediate B1)