Mohamed Bilel Hasni

Senior Data & AI Engineer

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Portfolio https://hasnimedbilel.github.io/

Professional Summary

Cloud-savvy Data Engineer with 5+ years of experience in scalable data platforms, ETL frameworks, and real-time integration. Expert in Azure, Databricks, and Spark, with strong skills in data modeling, pipeline optimization, and automation. Experienced in AI/ML workflows and both descriptive and predictive analytics. Supporting clients on high-impact cloud projects.

Core Competencies

Cloud Platforms
- Azure (Synapse analytics, ADLS, Azure Devops, Logic Apps), Databricks

Data Engineering
- ETL/ELT design and orchestration using Azure Synapse Pipelines, Dataflows and Notebooks
- Delta Lake, Lakehouse Architecture, Bronze/Silver/Gold data modeling
- Stream and batch processing with Spark, PySpark
- Integration of SAP SuccessFactors (SF) data into Azure Data Lake using Synapse Pipelines
- API-based ingestion and large dataset handling

Languages & Tools
- Python, Spark, Pandas, SQL, Java, R, Docker, Git, CI/CD

Visualization
- Power BI, Tableau

AI
- PyTorch, Langchain, Scikit-learn, HuggingFace

Professional Experience

Jan 2023–Ongoing **Data Engineer**, *SFEIR, Luxembourg.*
- Big Data analytics/processing, design and architecture of ETL pipelines in Azure to support data ingestion&integration of operational data sources.
- Big Data Engineering, Azure Synapse Analytics, Databricks, ETL, Spark.

Jan 2020–December 2022 **Data Engineer/Scientist**, *Putnam PHMR.*
- Application of AI in the healthcare industry: Clustering, unsupervised learning, Natural Language processing ...
- Data Engineering, Data Warehousing, ETL, PySpark, SQL, Pandas.
- Data visualization & Dashboarding.

Education

2016–2019 **National Engineering School of Sousse, Tunisia**,
Computer-Science Engineering degree.

2014–2016 **Preparatory Institute of engineering studies el Manar, Tunisia**,
Mathematics & Physics.

Certifications

Microsoft Azure
- Microsoft DP-203 : Azure Data Engineer Associate [Link]
- Microsoft AZ-900 : Azure Fundamentals [Link]

Databricks
- Databricks : Certified Data Engineer Associate [Link]

Key Projects

CDH Platform — **Data Engineer**, *KPMG*.

- Leveraged SAP SuccessFactors (SF) and SAP HANA for handling large-scale data to support internal operations, using Synapse Pipelines, Dataflows, and Spark for efficient data processing and integration.
- Developed enterprise-grade, automated data pipelines in Azure Synapse Analytics for reporting and analytics.
- Built CI/CD for automated deployment of data workflows via Azure DevOps.
- Designed lakehouse architecture to support structured and unstructured data.
- Collaborated on governance, lineage, and access management using Azure Purview, Microsoft Entra ID (IAM).
- Project collaboration and CI/CD with Azure DevOps: branch-based development in Synapse, team workflows, and deployment across DEV/UAT/PROD environments

TAK Treatment Clustering (ISPOR) — **PySpark, Flask, PostgreSQL**, *ISPOR 2022 Conference*.

- Developed an ML solution for clustering treatment sequences, using Clinical trials data.
- Used unsupervised learning techniques with image processing for treatment sequence analysis.
- Scientific publication submitted to ISPOR.

Abstractron — **PyTorch, Transformers, BioBert**, *PUTNAM PHMR*, 2022.

- NLP solution to automate abstract classification using Transformer architecture (BioBERT), with domain-adapted embeddings via masked language modeling technique.
- Averaging embeddings of different inputs to produce a final data representation used for abstract classification task.
- Defined custom loss function to deal with class imbalance.
- Model performance evaluation : Precision, Recall, F1 Score, and Confusion Matrix to optimize classification results.

Publications

2022 TAK (Treatment Sequences Analysis Through K-Clustering), [ispor]

2022 Could Artificial Intelligence Support Prediction of Reimbursement Decisions in Scotland? A Pilot Project, [ispor]

2022 Promises of AI-Assisted Patient Monitoring Methods, [ispor]