Houcem BEN MAKHLOUF

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Practical Experience

IT Consultant — Data Science and Cloud Engineering
IAV GmbH, Germany
Oct 2022 - Present

- Provided strategic guidance to clients in the automotive and services sectors, helping them leverage data-driven solutions to optimize operations and drive business innovation.

- Pitched and secured multiple new client projects by showcasing tailored data solutions and demonstrating value, leveraging effective communication and market knowledge to expand client engagement and increase business opportunities.

- Facilitated Agile sprints with clients to develop, evaluate, and deploy scalable data-driven solutions.

- Led the development and deployment of cloud-based solutions, automating the integration, analysis, and management of large-scale electric vehicle datasets, while implementing CI/CD pipelines to ensure rapid delivery, continuous improvement, and faster time-to-market for clients.

- Led migrations to improve system efficiency, replacing legacy ETL solutions with open-source platforms, which reduced operational costs by 50%, and transitioning data analysis from VBA to Power BI, resulting in a 40% increase in processing speed.

- Conducted comprehensive market analysis of AWS Marketplace, identifying NLP opportunities, and developed language processing and OCR projects by fine-tuning models, optimizing parameters, and deploying two premium AI-driven solutions for a global automotive industry clientele.

Master Thesis — Multilingual and Cross-Modal Embedded Representation for Tweets Aggregation
L3S, Germany
Jan 2022 - Sep 2022

- Developed a novel system that combined multiple data sources and languages to improve representation of social media content, achieving more accurate and comprehensive insights than previous methods.

- Automated data labeling processes and extracted features using state-of-the-art NLP models and computer vision models, reducing manual labeling time by 40%.

- Engineered and supervised the training of multiple neural networks to address a classification task, achieving an accuracy improvement of 20% over baseline models.

- Evaluated the learned embedding of the trained models using unsupervised machine learning methods, resulting in a 20% increase in clustering performance.

Working Student — Software Development and Data Management
IAV GMBH, Germany
Aug 2021 - Sep 2022

- Developed a RESTful API and web application for managing automotive driver assistance test case data, enabling real-time data processing and remote access through touch-command simulations, while working closely with clients to ensure alignment with their needs and expectations.

- Coordinated a cross-functional agile team, managing tasks, tracking tickets, and prioritizing client requirements through sprint planning, while acting as a liaison between the technical team and clients to ensure transparency and progress updates.

- Deployed multiple cloud-native solutions utilizing AWS, ensuring seamless remote testing capabilities, and communicated deployment strategies and benefits to clients, which helped secure ongoing collaboration and trust.

Working Student — Full Stack Web Development
HZI GMBH, Germany   *Dec 2020 - Jul 2021*

- Administered an interactive bacterial genome web application, used by over 100 doctoral students.

- Developed a responsive user interface for efficient gene expression extraction and comparison, integrating data extraction, processing, and gene parameter computation to streamline research workflows.

Working Student — Data Mining & AI
Leibniz University Hannover, Germany   *Apr 2020 - Nov 2020*

- Developed and led the implementation of the "Gaussian Hellinger Very Fast Tree" (GHVFDT) for detecting pulsar candidates, processing over 100,000 records in an unbalanced data stream, and conducted 50+ experiments to evaluate model performance, resulting in a 15% increase in detection accuracy over benchmark models.

- Preprocessed and fine-tuned large-scale internet crawl data to improve a Large Language Model (LLM) for sentiment analysis, increasing accuracy by 20%, and deployed the model into a web application for real-time user insights and decision-making.

Diploma Thesis — Production of a Vehicle Beam Testing Device   Grade: 1.0
TTEI - ONETECH GROUP, Tunisia   *Feb 2018 - Jul 2018*

- Designed and built a testing machine to evaluate the mechanical and electrical properties of keyless entry cables, connecting the car's control unit to the vehicle's entry system.

- Automated the testing process to perform mechanical stress tests and measure resistance, ensuring compliance with industry standards for keyless entry systems.

- Worked closely with teams from different departments and aligned project tasks with client requirements, while regularly updating the client to ensure the successful delivery of the testing machine.

Education

- **Master of Science in Computer Science**, Leibniz University Hanover   *Oct 2019 - Sep 2022*
- **C1 German Course**, Hochschule München   *Feb 2019 - Sep 2019*
- **Diplom Engineer in Mechatronics**, Polytechnic Engineering School Tunis   *Sep 2013 - Aug 2018*

IT Skills

- **Programming Languages:** Python, JavaScript, HTML5, CSS3, VBA

- **Libraries and Frameworks:** React, Bootstrap, Redux, Material-UI, Django, Pandas, NumPy, scikit-learn, Pytorch, Matplotlib

- **Databases:** MongoDB, MySQL

- **AI:** Machine learning, Classification, Neural Networks, NLP

- **Data Analytics:** Data Visualization, Data Pre-processing, Data Exploring, Dimensionality Reduction

- **Cloud:** AWS

- **Further:** Microsoft Office, Power BI, Visual Studio Code, Git, Jira

Linguistic Proficiency and Interests

- **Linguistic Proficiency:** Native in Arabic, Advanced in English, German , and French

- **Interests:** Basketball and Traveling

Social Commitment

- Member of the association "Fédération tunisienne d'automobile"   *Jan 2013 - Dec 2014*

- Member of the association "Association de la Continuité des Générations"   *Jan 2015 - Dec 2018*