Mohcine Madkour
Senior Data Scientist

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EXPERIENCE

July 2021 – Present (Dallas Area)   **Intuitive, Sr. Services Analytics Data Scientist**

- Engineered a scalable predictive model framework for platforms X, Xi, Ion, dV4, and dV5, resulting in a **25% lift** in proactive service rates for Xi systems and a **10% lift** for dV5 and Ion systems leading to an increase of +6.5% of system uptime. Tools: AutoGluon
- Implemented ML-powered fault detection for Endoscope Controller, boosting proactive maintenance capabilities by 97% and initiating 285+ service actions to prevent that procedures interruptions by 8+% Tools: AutoGluOns, Docker, AWS Lambda,

October 2018 – July 2021 (Columbus Indiana)   **Cummins, Senior Data Scientist**

- Increased marketing ROI and profitability by 5-6% by deploying classification models to identify sales growth opportunities from customer behavior patterns.
- Isolated key failure modes in the Cummins Diagnostics pipeline, streamlining troubleshooting steps and reducing labor hours to achieve $700K in annual savings. Methods: Analytics-based repairs, diagnostic optimization, and causal inference on telematics data from 500K+ trucks.
- Boosted equipment uptime and utilization by implementing a proactive anomaly detection system that reduced critical engine events for the Cummins Care Team. Methods: Failure stratification, transient mode definition, and Matrix Profile analysis on time-series data to identify emerging fault patterns.
- Identified systemic failure modes causing fleet downtime, enabling a 17% improvement in engine reliability and problem-solving efficiency, delivering $110K in annual savings.
- Led the technical development of a warranty recovery model that identified supplier-related claim liabilities, enabling **$7.2M+ in annual cost recovery**.

ACADEMIA EXPERIENCE

June 2017 - Sept 2018 (Gainesville FL)   **UF Health, Assistant Research Professor**

- **Spearheaded** the development of a predictive analytics framework that **accurately assessed the risk** of 8 post-operative complications and mortality. The model demonstrated **exceptional performance**, with AUC scores between 0.82 and 0.94. [Article](#)
- Successfully implemented a risk prediction tool that provided superior prognostic insights, leading to a 12% and 16% improvement in classifying patient risk for Kidney Injury and mortality, respectively, over clinical judgment alone.

May 2015 - June 2017 (Houston TX)   **UTHealth, Scientist Fellow**

- Extracted temporal information in clinical narratives using ontologies and SPARQL: Better assessment of the annotation task. Used with medical NLP techniques to resolve granularity and co-reference resolution problems, Built visual timeline of care. [Article 1](#), [2](#)
- Designed and developed OWL based model that capture essential features of the Healthcare Conceptual Work Product. Verified usability by clinicians using discrete event simulation for beneficial impact, showed highly remarkable results on improving care measurably and predictably. [Report](#), [Article](#)

Nov 2013 - March 2015 (Houston TX)   **U of H Engineering Technology, Postdoc**

- Developed data-driven approach to estimate energy saving potential and monitor the demand response of energy at the University of Houston campus. Work approved by the Smart Grid Education and Training Coalition - UH Smart Campus sponsored by DoE. [Article](#)

EDUCATION

- 2008-2013 **PhD in Computer Science,** University of Mohamed 5 Agdal, Rabat, Morocco.
- 2010-2013 **master's in web technologies and Cybersecurity**, Télécom Bretagne, Brest, France.
- 2006-2008 **Master of Science in Computer Science**, University of Ibn Zohr, Agadir, Morocco
- 2001-2006 **Bachelor of Science in Applied Math**, University of Ibn Zohr, Agadir, Morocco

SKIILS AND COMPETENCIES

- Efficient in Platforms: Snowflake, Databricks, Posit. AntiGravity, AWS, Azure
- Fluency in Python scripting language with strong Experience in Statistical Modeling and ML models.
- Expertise in advanced analytics libraries: PyTorch, TensorFlow, Keras, NumPy, Pandas, Scikit-Learn, Plotly, Streamlit, LSTM. Sckit-learn
- Strong Experience in Automation, ML Flow, Scheduling and Triggers, DAG, APIs, SDKs, Cost Management,
- Strong Experience in Tableau Dashboard building and software development lifecycle: MLOPs, Quality, DevOps.
- Working Experience in deep learning applications. (Experienced with tools such as TensorFlow, Keras, PyTorch).

CERTIFICATIONS / LEADERSHIP ROLES

- Certified Azure Data Scientist Associate
- Certified Databricks Generative AI Architecture
- Winner of the Cummins Operation Team (COT) Award 2019
- Certified Mirth Connect Developer from NextGen, Since 2018
- Certified PyTorch and Certified Deep Learning developer for Computer Vision from Nvidia
- Data and Cloud Computing International IEEE conference - Best paper Award