

MARIA FEBUS

HEALTHCARE DATA SCIENTIST | AI & PROJECT LEADERSHIP

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SUMMARY

Healthcare analytics professional with 15+ years in pharmaceutical R&D and supply chain, evolved from IT project leadership into data science and AI. Combines hands-on expertise in Python, machine learning, and statistical modeling with deep experience in GxP-regulated environments and a proven record leading cross-functional initiatives. Translates complex analyses into decision-ready insights for executive and technical stakeholders, with a growing portfolio of independent healthcare AI projects and faculty-supervised applied research.

TECHNICAL SKILLS

- **Programming:** Python (NumPy, Pandas, Scikit-learn), SQL, TensorFlow, PyTorch
- **Machine Learning & Deep Learning:** Regression, Logistic Regression, Decision Trees, Random Forest, XGBoost, Convolutional Neural Networks (CNN), Transfer Learning, LLMs / RAG / Agentic AI
- **Analytics:** Exploratory Data Analysis (EDA), Statistical Analysis, Feature Engineering, Model Evaluation
- **Simulation & Modeling:** Discrete Event Simulation (DES), Agent-Based Modeling (ABM) using AnyLogic
- **Data Visualization:** Matplotlib, Seaborn, Altair, Power BI, Qlik Sense
- **Platforms:** MySQL, PostgreSQL, Informatica, Azure, Databricks, GitHub
- **Project & Regulated Systems:** SDLC, Agile/Scrum, Computer System Validation (CSV), GxP
- **Lean Six Sigma:** DMAIC - SIPOC, Voice of Customer (VoC), Critical-to-Quality (CTQs)

RESEARCH EXPERIENCE

Research Assistant — Applied Computer Vision & Machine Learning (Project 2539)

Aug 2026 – Present

University of Michigan | Faculty-Supervised Research | Recycling & Environmental Sustainability Applications

- Conducting applied computer vision and machine learning research for recycling and environmental sustainability applications, curating and validating image datasets and developing reproducible research workflows to support model experimentation.
- Developing and evaluating computer vision models using Python and PyTorch, applying transfer learning and systematic performance analysis to assess feasibility, identify limitations, and inform subsequent research iterations.
- Maintaining research code, notebooks, metadata, and experimental documentation while synthesizing methodology, findings, and recommendations for a faculty-supervised research paper and presentation.

SELECTED DATA SCIENCE & AI PROJECTS

Breast Cancer Detection Using Convolutional Neural Networks (CNN)

July 2026

- Built a CNN classifier (EfficientNetB0 transfer learning, two-phase fine-tuning) to detect malignant breast tissue from histopathology images, using patient-level train/test splitting to prevent data leakage across visually correlated image patches from the same patient.
- Addressed class imbalance via class weighting and tuned the decision threshold against the precision-recall curve to reflect clinical risk, improving malignant-case recall from 0.15 to 0.90 versus the initial baseline.
- Deployed HistoTriage, a Streamlit prototype that runs live inference on uploaded histopathology patches with calibrated confidence scores, including a review-queue concept demonstrating pathologist-triage workflow support.

Predicting Myocardial Infarction and Identifying High-Risk Profiles

June 2026

- Supervised classification combined with unsupervised clustering to identify individuals at risk of myocardial infarction and surface distinct high-risk patient profiles; independently extending into an agentic AI decision-support system.

Diabetes Prevalence & Chronic Disease Correlation Analysis

February 2026

State-level correlation analysis linking diabetes prevalence with comorbid conditions and socioeconomic indicators using CDC and U.S. Census data; incorporated bias and ethical considerations into interpretation.

Additional projects, including work in progress, at mfebus.github.io

PROFESSIONAL EXPERIENCE – SELECTED PROJECTS

Senior IT Manager, MedTech ERP Portfolio — Johnson & Johnson, MedTech

2022 – 2024

- Led technology governance for global Manufacturing and Order-to-Cash technology workstreams supporting a large-scale MedTech ERP transformation.

- Managed approximately \$150M in technology investments and a portfolio of 100+ technology resources, overseeing financial performance, resource planning, and executive governance.
- Provided executive visibility into portfolio financials, resource capacity, delivery health, risks, and cross-workstream dependencies, enabling informed technology governance and decision-making.
- Developed the MedTech Legacy ERP Decommission Roadmap, performing impact analyses of program changes and identifying \$59M in projected decommissioning savings.
- Supported semiannual business planning cycles by delivering portfolio updates, financial analyses, and strategic recommendations to inform enterprise investment decisions.

IT Project Manager — Data Management & Analytics — Johnson & Johnson, Janssen R&D

2015 – 2022

- Led development of the Peripheral Blood Mononuclear Cell (PBMC) Sample Management System, providing end-to-end chain-of-custody visibility across the sample journey, from blood draw through transport to external labs and CROs for further analysis, while enabling performance metrics to assess CRO quality and reliability. Strengthened data integrity for scientific and regulatory use; recognized with the 2022 J&J Innovation Leadership Award.
- Directed data integration and analytics support for COVID-19 vaccine programs aligned with Emergency Use Authorization (EUA) submissions.
- Led creation of the Clinical Operations IT Portfolio Governance Model, giving senior IT leaders visibility into the health of a \$33M IT investment portfolio through executive dashboards, structured project reviews, and proactive risk mitigation.
- Led implementation of the first release of Enterprise Data Lake aligned with R&D data strategy, operationalizing data pipelines and enabling advanced analytics across Clinical Operations.

IT Project Manager — Johnson & Johnson, Janssen Supply Chain

2010 – 2015

- Spearheaded design and implementation of IT New Product Introduction (NPI) processes supporting 24-hour Rapid U.S. Launches, confirming distribution-center inventory readiness within 24 hours of FDA approval.
- Led the design and enterprise-wide rollout of the Project Management Excellence (PMx) function across Supply Chain Business Unit IT, establishing standardized end-to-end project lifecycle processes, governance stage gates, and delivery practices spanning business case development, capital appropriation, architecture review, resource onboarding, project execution, risk and issue management, scope/change control, communications, performance monitoring, and project closure.
- Led SAP configuration supporting a direct-to-provider distribution model, enabling compliant dispensing to 350 U.S. physicians and optimizing end-to-end supply chain workflows.

ADDITIONAL PROJECTS

Johnson & Johnson, Janssen Supply Chain

- NPMonitor Reporting Portal (Scrum Master) Led launch of the NPMonitor reporting portal, delivering end-to-end visibility into new product status from drug substance through drug product manufacturing, streamlining cross-functional status reporting across the launch lifecycle.
- SAP Master Data Management Platform (Project Manager) Implemented a platform consolidating pharma product master data from 5 ERP systems, improving data quality and accessibility for critical business processes.
- EPO/EPREX Bio-Manufacturing Simulation Model (Project Manager) Led development of a discrete-event simulation model for the EPO/EPREX bio-manufacturing process, enabling data-driven evaluation of production scenarios, capacity planning, resource utilization, and manufacturing bottlenecks. The model supported strategic recommendations for plant expansion, resource allocation, and long-term manufacturing planning, contributing to an innovation recognized with the J&J IT IMAGE Award.

EDUCATION

- Master of Applied Data Science and AI (MADS) - Expected August 2026, University of Michigan
- Post-Graduate Certificate, Agentic AI — Expected October 2026, Johns Hopkins University
- Post-Graduate Certificate, AI in Healthcare — Completed 2025, MIT xPRO
- Post-Graduate Certificate, Applied Data Science — Completed 2025, MIT xPRO
- Bachelor of Business Administration, Computer Information Systems — Summa Cum Laude, Baruch College (CUNY)

CERTIFICATIONS

- Certified Project Management for AI (PMI-CPMAI) - Expected December 2026
- Project Management Professional (PMP) 2009 – 2024
- Certified Scrum Master (CSM) 2021 – 2024

AWARDS

Johnson & Johnson Innovation Leadership Award | Johnson & Johnson IT IMAGE Award