WIM VERLEYEN, PHD

Brooklyn, NY | +1 (516) 513-2200 | wim.verleyen@gmail.com | https://www.linkedin.com/in/wimverleyen/

DATA, AI/ML AND ENGINEERING LEADER

Innovate Products and Services | Drive Business Value Across Firm's Functions and Lines of Business

Technology leader with experience in advancing data capabilities for descriptive, diagnostic, and predictive services, working closely with users, technology leaders, business stakeholders, and C-suite executives, solving real-world problems. Enthusiastic AI/ML and data science discipline professional, building high-performing teams and delivering on commitments with integrity and thought leadership. Align data and analytics strategy with firm's strategy and vision.

Focus on value creation, building data-centric firm, prioritizing use cases for innovative scientific and technological products and solutions. Collaborate on Agile teams, transforming existing products and services and ensuring regulatory compliance in new era of AI. Bring extensive hands-on experience in science and engineering across multiple domains and industries.

Applicable expertise for [Firm] includes:

Marketing analytics | Statistical modeling, machine, and deep learning | NLP, computer vision and Generative AI

Predictive maintenance and prognostic health management | Deployment of AI/ML solutions with monitoring

Responsible AI and AI assurance | Use case and road map definition and execution | Product Owner | Tech Lead

PROFESSIONAL EXPERIENCE

RAYTHEON TECHNOLOGIES (RTX), Brooklyn, NY 2020 - Present

Head of AI/ML Innovation team, Enterprise Data Services

Deliver business value by designing and implementing AI/ML product portfolio aligned with business strategy and in compliance with data governance, data lineage, and AI governance. Transition prototypes into deployable proof-of-concepts by monitoring AI/ML products. Validate trustworthiness of AI systems to users, accounting all product deployments, incorporating AI assurance, and integrating latest trends for Generative AI.

- Built AI/ML solutions across various domains, including prognostic health management, cybersecurity, Industry 4.0, operational research, computer vision, and Generative AI aligning Collins Aerospace, Pratt & Whitney, and Raytheon business units towards holistic investments worth $100M per year in new value streams (NVS).
- Established best practices with engineering leads, including data science and AI/ML models into software development life cycle (SDLC) for deploying early-stage prototypes into production-grade software.
- Managed and developed executive accounts for $10M per year investments in business intelligence (BI), digital operations, AI/ML innovation initiatives for building multidisciplinary teams and delivering business value.
- Integrated critical DataOps, MLOps, LLMOps, enterprise data catalog, metadata, and data quality capabilities into data platform, including Databricks, Snowflake, Airflow, dbt, Neo4J, Kobai, etc. for achieving business requirements.
- Influencing buy-versus-build decisions, including vendor and third-party assessment, data acquisition, and alliances for academic collaboration and strategic partnership by managing internal and external relationships.

UNITED TECHNOLOGIES (UTC), Brooklyn, NY

Data Science Tech Lead, Digital Accelerator 2019 - 2020

Created insightful analytics for decision making with new AI/ML solutions for critical projects as Tech Lead in cross functional product groups. Managed team of 5-10 data scientists. Established foundational components for building AI/ML products, including object-oriented design patterns and ML design patterns, focusing on attention to detail and customer satisfaction, executive and technical presentations, clear written communication, deadline-driven execution.

- Automatized contract classification, scaling yearly contract reviews for business subject matter experts. Reduced cost of document classification with $100 M per year by building AI/ML solution based on natural language processing (NLP; TF-IDF, spaCy, NLTK, feature importance, threshold analysis, KPI evaluation).
- Contributed to cloud-based reliability analysis (CERA), web application and APIs for reducing warranty claims and supply chain costs. Applied reliability analysis across different business units, including Carrier, Pratt & Whitney, and Collins Aerospace, gaining $35M per year cost reduction, including product reliability assessment and supply chain management.

UNITED TECHNOLOGIES (UTC) (Continued)

- Swiftaxiom: A watch list generator for preventing unscheduled engine removals. Reduced operational costs by $50M, generating watch list for identifying failure modes or failure mechanisms of critical parts of aircraft.

Senior Data Scientist, Digital Accelerator 2018 - 2019

Contributed to business development by creating data analytics solutions, collaborating with project management leadership. Enhanced trust among subject matter experts for making decisions based on data and analytics insights. Led the definition of data requirements, data modeling, and deployed models together with business unit representatives. Conducted in-depth analysis supporting business decision making through data visualization.

- Applied PHM and predictive maintenance, reducing cost by $25 M per year across business units at United Technologies.
- Designed and implemented first revenue-generated data science model for predictive maintenance, realizing cost reduction of $8M at Pratt & Whitney.
- Improved condition-based maintenance solution with $5 M per year in cost reduction by collaborating with UTC Research Center and OTIS.

AUDIBLE INC., Newark, NJ 2015 - 2018

Data Scientist

Architected and implemented engineering solutions for hosting data science solutions. Managed expectations and deliverables between corresponding stakeholders, data science team, and data warehouse engineering team. Supported multiple use cases for different business stakeholders, generating business value by building big data machine learning models for marketing analytics. Developed and implemented crisis and change management procedures.

- Pioneered and integrated engineering solutions for personalization (P13n) and customer relationship management (CRM) data science model deployment valued at $35 M/year, recommending systems, retention models, NLP-based models, multi-armed bandit approaches, and network-based inference.
- Co-founded CARBON stream- data engineering, software engineering, and solution architectures for hosting data science models at Audible / Amazon by leveraging Amazon's software development tools and applying batch and streaming data processing for hosting data science and AI/ML models across all Audible programs.
- Authored Alchemy data science models with business value of $80 M per year by predicting propensity of Amazon member to become an Audible member for email, targeting gateway banner, and search twister on Amazon.com.

ADDITIONAL RELEVANT EXPERIENCE

COLD SPRING HARBOR LABORATORIES

Post-Doctoral Fellow

Conducted and published research in protein function prediction, improving future methodologies. Designed and implemented meta-analytical analysis for examining impact on aggregation of different network inference methodologies and effect of reproducibility of novel protein function predictions.

FREE UNIVERSITY OF BRUSSELS

Research Assistant

Conducted eHealth, biotechnology, computational biology, artificial intelligence and machine learning research, supporting medical campus in Jette as system administrator of RHEL servers. Supervised technical projects illustrating strong problem-solving skills. Supervised technical projects illustrating strong problem-solving skills.

VASCO DATA SECURITY

Software Maintenance Engineer

Improved software applications for embedded systems for electronic funds transfer (EFT) terminals and internet security appliances. Provided technical support for various service level agreements (SLAs), implementing, and supporting production with functional acceptance tests (FAT), and training third parties for software application development.

TECHNICAL SKILLS

- **STATISTICAL MODELING:** Parametric (linear regression, logistic regression, etc.) and non-parametric modeling (Gaussian processes, deep learning models, etc.), feature selection, regularization, feature engineering, performance evaluation.
- **GENERATIVE AI:** Computer vision, generative adversarial networks (GANs), variational autoencoders, multimodal models, and large-language models (LLMs: OpenAI and open source): prompt engineering, retrieval augmented generation (RAG: LangChain and vector database), pre-training, quantization, and fine-tuning of LLMs (Hugging Face, LoRA, QLoRA), reinforcement learning from human feedback (RLHF), etc.
- **MARKETING ANALYTICS**: Recommender systems, digital banner, multi-armer bandit (MAB), clustering, seg-mentation, sentiment analysis, market-basket analysis.
- **PROGNOSTIC HEALTH MANAGEMENT:** Reliability analysis, time series analysis, survival analysis, watch list generation, anomaly detection, sensor networks, root cause analysis.
- **AI/ML PRODUCT MONITORING**: Incorporate user experience research, A/B testing and MAB, measure data drift, model performance evaluation.
- **PROGRAMMING AND TOOLS:** Python, Scala, C/C++, R, Spark, SQL, BigQuery, RedShift, GitHub. MLOps Cloud technology (GCP, AWS, Azure - commercial and govcloud), microservices (docker, MLFlow, redis, MQRabbit, celery, Flask, FastAPI, dbt, Databricks, Airflow, SageMaker, AzureML, Kubernetes), and CI/CD (Jenkins and Terraform enterprise). Architecting LLMOps solutions with Azure and AWS services in production.
- **SCIENTIFIC COMPUTING LIBRARIES:** Numpy / scipy /matplotlib, pandas, seaborn, scikit-learn, xgboost, CausalImpact, ten-sorflow, keras, jax, pytorch, captum, statsmodels.

EDUCATION

- Executive Education for Chief Technology Officer, Wharton School, University of Pennsylvania, Pennsylvania, US
  - Capstone project: Framework for disruptive AI/ML Innovation
- **Doctor of Philosophy (PhD)**, Biology, University of Saint Andrews, Saint Andrews, UK
  - Thesis: Machine Learning for Systems Pathology
- Graduate in Fiscal Science, European College University, Brussels, Belgium
- **Master of Science (MS)**, Computer Science, Free University of Brussels, Brussels, Belgium
  - Thesis: Synchronization algorithms and performance for Distributed Discrete Event Simulation
- **Master of Science (MS)**, Electrical Engineering, University of Leuven, De Nayer Campus, Belgium
  - Thesis: Evaluation of C / C++ oriented high-level design flows through bit detection block for optical disks

PUBLIC SPEAKING AND AWARDS

- AI Accelerator Summit Boston 2023: Constructing a business framework to unshackle innovation and breakdown inter-nal AI literacy gaps.
- Keynote speaker at US CDO Network Conference 2023: Framework for disruptive AI/ML Innovation.
- Top 25 AI/ML Consultants and Leaders of 2023 by The Consulting Report.
- Received designated confidential information (DCI) award by UTC for performance evaluation of watch list.

PUBLICATIONS

Google Scholar