Giuseppe Rumore

Engineer / Data Scientist/ Machine Learning Engineer/ CAD&FEM

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GitHub | | Portfolio

Skilled in harnessing the potential of data science and machine learning, dedicated to transforming engineering processes, optimizing designs, and improving overall performance. Possess extensive experience in predictive analytics, big data integration, and AI-powered tools. Combining expertise in CAD modeling and robotics to provide innovative and efficient solutions.

Professional Experience

12-2022
08-2024

ERP Consultant

Steltix, Berlin, Germany (Remote)
Field: Enterprise Resource Planning (ERP), JDEdwards, Business Management Software
Subjects:

- **Comprehensive Business Management Solutions**: Developed and optimized ERP solutions for manufacturing processes, leading to a 20% increase in operational efficiency.
- **Materials and Production Planning**: Monitored and maintained key systems for Bill of Materials (BOM), Materials Requirements Planning (MRP), Demand Resource Planning (DRP), and Capacity Planning, ensuring alignment with production goals.
- **Operational Oversight**: Supervised day-to-day operations, including product and materials routing, manufacturing workflows, and cost accounting, to ensure efficiency and accuracy across all processes.

09-2017
07-2022

Mechanical Engineer | Data Scientist

IMI Climate Control, Basel, Switzerland
Field: Heating Systems, Hydronic Systems, Expansion Vessels, Vulcanization Processes
Subjects:

- **Data-Driven Testing and Analysis**: Designed and developed testing platforms utilizing advanced data analysis techniques, increasing **defect detection rates by 30%** and reducing **testing time by 20%** for heating and hydronic system products.
- **Product Optimization through Analytics**: Conducted in-depth data analysis to uncover patterns and insights, leading to a 10% reduction in production costs and a 10% improvement in product efficiency.
- **Predictive Analytics for Problem Solving**: Applied statistical modeling and predictive analytics to identify and address design and performance issues, ensuring proactive solutions and enhancing product reliability.
- **Product Design**: Enhanced the design of existing products to reduce production costs while maintaining quality; developed CAD prototypes and conducted comprehensive FEM testing for new product lines.
- **3D CAD Hydraulic Components**: Designed precise 3D CAD models for hydraulic connectors to seamlessly integrate valves of varying diameters, improving system compatibility and efficiency.
- **Robotic Automation**: Procured and implemented robotic arms to automate assembly line processes, reducing setup time by 20%.

01-2017
08-2017

Engineering Consultant (Overhead System Engineering Support)

ALTEN GmbH, Cologne, Germany
Field: Automotive Industry, Overhead Systems
Subjects:

- **Logistics and Production Support**: Helped streamline material flow and day-to-day build schedules, contributing to roughly a **7% reduction in line-stop incidents** while learning core plant-floor routines.
- **3D Design Validation:** Assisted senior engineers in checking CAD models against spec; early feedback raised first-pass design acceptance by **about 9%**, giving me my first hands-on taste of design quality gates.
- **Supplier Collaboration**: Acted as a junior point-of-contact between Ford and component suppliers, which trimmed average delivery variance by **≈6%** and taught me the basics of relationship management in a global supply chain.

06-2016
12-2016

Contractor

European Patent Office, Munich, Germany
Field: Patents, Machine Tools, Plastic Welding Procedures
Subjects:

- **Patent Management and Analysis**: Managed patents related to machine tools and plastic welding procedures, employing structured methods and early-stage AI-inspired techniques to enhance evaluation processes.

Impact:

- **Enhanced Technical Understanding**: Leveraged analytical approaches, including AI-driven methodologies, to improve technical patent assessments, increasing evaluation speed by 40% and accuracy by 25%.
- **Optimized Search Processes**: Developed and implemented innovative tools and systematic techniques influenced by AI concepts, reducing patent search time by 20% and cutting manual effort by 35%.

Education

09-2024
06-2025

Data Science and MLOps

DataScientest.com in collaboration with Université Paris 1 Panthéon-Sorbonne
Engaged in comprehensive training covering advanced programming, data visualization, machine learning, deep learning, and big data technologies. The curriculum includes:

- **Data Visualization**: Matplotlib, Seaborn.
- **Machine Learning**: Classification, regression, clustering with scikit-learn.
- **Advanced Machine Learning**: Time series, text mining, dimensionality reduction, recommender systems.
- **Big Data/Database**: SQL, PySpark, databases.
- **Deep Learning**: Neural networks, CNNs, RNNs with Keras, TensorFlow, and PyTorch.
- **MLOps & Cloud Deployment:** CI/CD pipelines, Docker, Kubernetes, Model Deployment, Monitoring & Scaling ML Models.

09-2010
07-2015

Master of Science: Mechanical Engineering with Major in R&D

INSA Lyon - Institut National Des Sciences Appliquées De Lyon - Lyon, France
Research Project

- **Mobile Nacelle Design for Water Turbines** – Developed a versatile nacelle design using CATIA V5 and ANSYS Workbench, ensuring structural integrity and adaptability to generate electricity or pump water for underprivileged regions.
- **Collision Analysis of Cranial Structures** – Enhanced understanding of stress distribution and improved 3D skull models through precise simulations ANSYS and CAD modeling, supporting biomechanical research and safety assessments.

Study Abroad:

- **Erasmus Semester at RWTH Aachen University** – Completed lectures on Internal Combustion Engines and Vehicle Acoustics.
- **Master Thesis: "Investigation of the Effects of Contoured Pistons in Common Rail Pumps"**
  Optimized piston designs for enhanced performance and reduced tribological losses through advanced Elastohydrodynamic (EHD) simulations in ANSYS. Achieved improved lubrication, contact behavior, durability, and overall efficiency in common rail pump systems.

Internship:

- **Lubricant Efficiency in Bearings** – *SKF, Utrecht, The Netherland*
  Investigated oleophobic coatings to reduce lubricant leakage, providing strategies for minimizing grease waste and contributing to sustainable bearing designs with improved efficiency and reduced environmental impact.
- **Stress Analysis of Wind Turbine Generators –** *Siemens Wind Power, Brande, Denmark*
  Evaluated FEM quality and accuracy of generator sub-components using ANSYS Workbench, validated simulations against test data, and enhanced design validation processes through precise geometric modeling in Autodesk Inventor.

09-2005
07-2010

High School Diploma

Istituto Scientifico Benedetto Croce - Palermo, Italy

Certifications

University Pantheon Sorbonne: **Data Scientist** and **Machine Learning Operations** specialization

Udemy: ROS2 Odometry and Control

Stanford University: **Machine Learning** Specialization

IBM: Databases and SQL for Data Science with Python (with Honors)

AWS Cloud Practitioner Essentials

Microsoft **Azure** Fundamentals AZ-900

CATIA - CAD 2D/3D and FEM Finite Element Methods

Languages

Italian, Albanian: Native Speaker

English: Advanced (C1 Certified: IELTS, TOEIC)

German: Fluent (B2 Certified: TELC)

French: Advanced (C1 Certified: TCF)

Spanish: Advanced (C1 Certified: DELE)

Portuguese: Intermediate (B1)

IT/Software

Python: Advanced

MATLAB: Advanced

ANSYS Workbench: Advanced

Catia v5/v6: Advanced

SolidWorks: Intermediate

AutoCAD Inventor: Intermediate

Docker

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Skills

Data Science

Robot Operating System ROS2

Machine Learning

Computer Vision

SQL

Git/Github