Contact

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www.linkedin.com/in/giuseppe-rumore-b2599961 (LinkedIn)
github.com/pepperumo (Portfolio)

Top Skills

Fluid Mechanics
Autodesk Inventor
Logistics Management

Languages

French (Full Professional)
Italian (Native or Bilingual)
English (Full Professional)
Spanish (Full Professional)
Portuguese (Full Professional)
Albanian (Full Professional)
German (Professional Working)

Certifications

Google Advanced Data Analytics Specialization
ROS2 For Beginners
The Data Science Course: Complete Data Science Bootcamp 2024
Microsoft Azure Fundamentals AZ-900 Exam Prep Specialization
CATIA - CAD 2D/3D and FEM Finite Element Methods

Giuseppe Rumore

Mechanical Engineer with focus in Data Science, Robotics and CAD/FEM
Berlin, Berlin, Germany

Summary

My profile is likea swiss knife, combining technical expertise in mechanical engineering, data science, and robotics.

Check out my projects on GitHub: github.com/pepperumo.

As a Mechanical Engineer with a strong background in Data Science, Machine Learning, and Robotics, I bring a unique mix of analytical thinking and practical implementation. My expertise spans from AI-driven solutions to CAD optimization and autonomous robotic systems, blending computational intelligence with real-world applications.

I have worked on projects that integrate Genetic Algorithms for optimizing structural designs, reinforcement learning for robotic control, and AI-driven manufacturing processes. With hands-on experience in Catia, Ansys Workbench, ROS2, and I navigate the intersection of engineering and artificial intelligence to push the boundaries of automation and efficiency.

Key areas of expertise:

As a Data Scientist & AI Engineer:
- Developing and optimizing AI-driven models for industrial and robotic applications
- Machine Learning, Deep Learning, and Data Analytics with Python (TensorFlow, PyTorch, Scikit-learn, DEAP)
- Computer Vision and Reinforcement Learning for robotics and automation
- AI-driven CAD optimization and generative design

As a Mechanical Engineer:
- Design and optimization of mechanical systems
- Structural analysis and simulation using FEA

As a Robotics Engineer:
- Development of autonomous robotic systems
- Simulation and control using ROS2
- Integration of AI for robotic perception and decision-making
- Kinematics, dynamics, and path planning for mobile and industrial robots

I am always eager to connect with like-minded professionals, researchers, and innovators. If you share a passion for AI, robotics, and cutting-edge technology, feel free to reach out!

Experience

Steltix
JDEdwards Consultant
December 2022 - August 2024 (1 year 9 months)
Berlin, Germany

Field: Enterprise Resource Planning (ERP), Business Management Software

Subjects:
- Comprehensive Business Management Solutions: Designed and developed ERP software to manage all facets of business operations, with a primary focus on manufacturing processes and optimization.
- 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.

IMI Climate Control
4 years 11 months

Quality Engineer & Data Analyst
September 2019 - July 2022 (2 years 11 months)
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 science techniques to evaluate performance trends and identify potential failures in heating and hydronic system products.
- Product Optimization through Analytics: Conducted in-depth data analysis to uncover patterns and insights, enabling cost reduction and efficiency improvements in product designs.
- 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.
- Big Data Management: Managed and analyzed large datasets from testing platforms to support product development and validate improvements, streamlining prototyping and testing processes.

Research Development Mechanical Engineer
September 2017 - September 2019 (2 years 1 month)
Lippstadt

Field: Heating systems, hydronic systems, valves, robotic arms, thermostats

Subjects:
- Product Design: Enhanced the design of existing products to reduce production costs while maintaining quality; developed prototypes and conducted comprehensive testing for new product lines.
- 3D CAD Hydraulic Components: Designed 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, significantly reducing setup time and enhancing production throughput.
- Value Analysis/Value Engineering (VA/VE): Led VA/VE projects to streamline processes, optimize materials usage, and enhance product performance.
- Process Automation and Valve Innovation: Automated key aspects of the production process and designed innovative valve systems to improve operational efficiency and expand product capabilities.

ALTEN GmbH / ALTEN SW GmbH
Engineering Consultant (Overhead System Engineering Support)
January 2017 - August 2017 (8 months)
Cologne Area, Germany

Field: Automotive Industry, Overhead Systems

Subjects:
- Logistics and Production Support: Coordinated logistics and production processes for car overhead systems, ensuring seamless operations and adherence to quality standards.
- 3D Design Validation: Conducted thorough reviews and validations of 3D designs using CAD software, ensuring accuracy and compliance with design specifications.

Impact:
- Supplier Collaboration: Acted as a liaison between suppliers and Ford, streamlining communication, resolving issues, and ensuring timely delivery of components to meet production schedules.

European Patent Office
Contractor
June 2016 - December 2016 (7 months)
Munich, Bavaria, Germany

Field: Patents, Machine Tools, Plastic Welding Procedures

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

Impact:
- Enhanced Technical Understanding: Leveraged analytical approaches, including emerging AI-driven methodologies, to improve the speed and accuracy of technical patent assessments.
- Optimized Search Processes: Applied innovative tools and systematic techniques influenced by AI concepts to streamline patent searches, significantly reducing time and effort.

RWTH Aachen University
Master Thesis
February 2015 - September 2015 (8 months)
Aachen, North Rhine-Westphalia, Germany

Field of Study: Pistons, Pumps, Tribology, Biofuels, Fluid Dynamics

Subject:

- Conducted research on the effects of modified piston designs in common rail pumps, focusing on the interaction between the piston and cylinder.
- Performed advanced Elastohydrodynamic (EHD) simulations using ANSYS to analyze and optimize the contact behavior and lubrication conditions.

Impact:
- Achieved optimization of piston contours to improve performance and durability.
- Reduced tribological losses between contact surfaces, enhancing efficiency and minimizing wear.

Siemens Wind Power
R&D: stress analysis, wind turbine generator
July 2014 - December 2014 (6 months)
Brande, Middle Jutland, Denmark

Field: Stress Analysis, Wind Turbine Generators

Subject:
- Assessed the quality and accuracy of a generator sub-component Finite Element Model (FEM) developed using ANSYS Workbench.
- Compared simulation results with structural test data to validate the model and identify areas for improvement.
- Utilized Autodesk Inventor CAD for precise geometric modeling and integration with the FEM workflow.

Impact:
- Enhanced the reliability and accuracy of FEM models, leading to better predictive capabilities and improved design validation processes for wind turbine generators.

INSA Lyon - Institut National des Sciences Appliquées de Lyon
11 months

Medical and mechanical Engineer
January 2014 - June 2014 (6 months)
Lyon, Auvergne-Rhône-Alpes, France

Field: Biomechanics, Collision Analysis, Finite Element Modeling

Subject:
- Investigated the impact of various objects colliding at different speeds on the forehead of a human skull.

- Acquired IMR images of a real skull to ensure anatomical accuracy.
- Modeled a 3D CAD representation of the skull using Amira and CATIA V5 software, based on the IMR images.
- Conducted Finite Element Analysis (FEA) using ANSYS Workbench to simulate and study the effects of the collisions on the skull's structural integrity.

Impact:
- Improved understanding of stress distribution and deformation in cranial structures during high-impact collisions.
- Enhanced the accuracy and reliability of 3D skull models for biomechanical research and safety assessments.

R&D project
August 2013 - January 2014 (6 months)
Lyon, Auvergne-Rhône-Alpes, France

Field: Water Turbines, Project Management

Subject:
- Designed and modeled a new mobile nacelle for a floating water turbine using CATIA V5 for CAD development and ANSYS Workbench for Finite Element Analysis (FEA).
- Conducted simulations to ensure structural integrity, efficiency, and adaptability of the nacelle under various operating conditions.

Impact:
- Developed a versatile nacelle design that can be deployed to generate electricity or pump water, addressing critical energy and irrigation needs in underprivileged regions.

SKF R&D centre
Internship R&D: research on lubricants, coatings and bearings.
July 2013 - August 2013 (2 months)
Nieuwegein, Netherlands

Domain of Study: Lubricants, Coatings, and Bearings

Subject:
- Investigated the effects of oleophobic coatings on bearing performance to evaluate their potential in reducing lubricant leakage.
- Conducted research to analyze how coating properties influence lubricant behavior and bearing efficiency.

Impact:

- Provided insights into the dynamics of lubricant losses, leading to strategies for minimizing grease waste.
- Contributed to the development of more sustainable bearing designs with reduced environmental impact and improved operational efficiency.

Education

INSA Lyon - Institut National des Sciences Appliquées de Lyon

Master's degree, Mechanical Engineering (R&D) / Génie Mécanique Développement · (2010 - 2015)

RWTH Aachen University

Erasmus Semester, Mechanical Engineering and Automotive Engineering · (2015 - 2015)

Istituto scientifico statale Benedetto Croce di Palermo (Italy)

Scientific school, Mathematics, Physics, Biology, Chemistry · (2005 - 2010)

VIREG Project, funded by the European Commision

Course, Resource efficiency · (April 2016 - May 2016)

365 Data Science

Bootcamp, Data Science · (June 2024 - July 2024)