

Abdirahman Said Dhore

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Professional Summary

Highly skilled Mechanical Engineer with advanced credentials from Politecnico di Milano and a Professional Diploma in Project Management. Specialized in industrial quality control, including the inspection of rotary equipment, piping systems, and instrumentation according to NACE and ASTM standards. Experienced in utilizing stochastic modeling and data analysis to optimize system performance and mitigate operational risks. A multilingual professional (English, Somali, Arabic, Italian) dedicated to leading complex infrastructure projects through rigorous quality assurance, technical documentation (WPS-PQR), and cross-functional team collaboration.

Experience

Freelance Technical Inspector (Mechanical & Industrial Equipment) Oct 2022 – Present

- Conducted high-level inspections of rotary and stationary equipment, including axial/centrifugal compressors and oil rig rotary tables, ensuring compliance with **ISO 10438, API 617, and API 6D**.
- Performed Factory Acceptance Tests (FAT), functional testing, and hydrostatic leak testing on various valve types (Globe, Butterfly, Control) and piping systems (HDPE, Welded, SMLS) per **ASME B31.3 and ASTM F2164**.
- Executed comprehensive quality control for instrumentation and coating, including pressure gauges, flow transmitters, and surface preparation inspections according to **NACE MR0175 and ISO 12944**.
- Verified technical documentation (WPS-PQR) and material certificates for ferrous and non-ferrous materials as per **ASME Sec. IX and DIN standards**.
- Witnessed operational and calibration tests for control valve actuators, including bore-scope inspections and vibration/noise measurement for gearboxes to ensure long-term reliability.

Inventory & Operations Auditor, RGIS Specialisti in Inventari SRL - Milan, Italy Dec 2025 – Mar 2026

- Conducted systematic stock verification and product detection across multiple commercial sites, utilizing digital inventory systems to ensure data integrity.
- Monitored supply chain levels and reported quantitative discrepancies, supporting broader logistics and retail operations.

Technical Inventory Collaborator, INVENTORY SRL - Alessandria, Italy Jan 2025 – Feb 2026

- Managed autonomous inventory data collection projects, coordinating directly with headquarters to ensure timely and accurate execution of stock audits.
- Applied systematic approaches to reconcile physical assets with digital records, minimizing tracking errors for client organizations.

Inventory Operations Associate, BRC Italia - Milan, Italy Aug 2024 – Jan 2026

- Executed qualitative and differential stock analyses for large-scale retail and commercial distribution centers.
- Operated specialized weighing and scanning equipment to validate warehouse inventory, maintaining high standards of quality control.
- Ensured continuous compliance with workplace safety standards while processing high volumes of logistical data under strict deadlines.

Education

Politecnico di Milano, Italy, M.Sc. in Mechanical Engineering Sep 2022 – Oct 2025

- **Key Focus:** Integrated Manufacturing Systems, Production Planning & Control, Industrial Risk Management, Data Analysis for Mechanical Systems, and Energy Systems.
- **Thesis:** Real-time validation and online input parameters calibration within a digital twin framework: an approach based on bootstrap particle filtering.

University of Tuscia, Tuscia, Italy (SKILLBILL Program), First Level Master (Online) in Sustainable Energy	Sep 2024 – Present
• Thesis: Investigation of the Dynamic Behaviour of Hydrogen Storage Tanks During Refilling at H70 and H35 Under Various Operating Conditions (Under review).	
Somali National University, Somalia , Laurea (B.Sc.) in Mechanical Engineering	Aug 2017 – Mar 2022
• Thesis: Automatic Conveyor belt using PLC.	
Mogadishu University, Somalia , Professional Diploma in Project Management	Sep 2019 – Sep 2020

Technical Skills

- **Simulation & Digital Twin:** Arena Rockwell, Factory I/O, Digital Twin Frameworks, Discrete Event Simulation (DES), MQTT, InfluxDB.
- **Data Analysis & Programming:** Python (Pandas, NumPy, SciPy, Flask), MATLAB (Simulink, Stochastic Modeling), SQL, Signal Processing.
- **Engineering Design & Automation:** SolidWorks, AutoCAD, ABAQUS, PLC Programming (Ladder Logic), Mechatronic Systems Control.
- **Manufacturing Methodologies:** Industrial Risk Management, Smart Maintenance (CBM), OEE Analysis, Supply Chain Management, ISO 22301, Design of Experiments (DOE).
- **Professional Competencies:** Microsoft Office Suite (Advanced Excel, PowerPoint, Word), Microsoft Project, Technical Report Writing, Cross-functional Collaboration, Root Cause Analysis.

Academic Projects

Digital Twin Development (Research Intern), Politecnico di Milano	Jun 2025 – Oct 2025
• Engineered a Digital Twin for a physical manufacturing line using Python, MQTT, Arena Rockwell Simulation Software, and InfluxDB. • Implemented Bootstrap Particle Filtering (BPF) to automate Model input parameter calibration, restoring model fidelity. • Developed a Flask web dashboard to visualize live validation KPIs for real-time monitoring. • Research Output: Co-authored "Joint online validation and parameter calibration within a digital twin framework" (Submitted to CIRP CMS 2026)	
Renewable Heating & Heat Pump Technology Research, University of Tuscia	Jul 2025
• Authored technical research on the large-scale deployment of Heat Pumps and biomass district heating systems. • Evaluated technical, economic, and policy barriers to decarbonization, analyzing coefficients of performance (COP) and thermodynamic efficiencies of large-scale heating technologies.	
Sustainable Energy Transitions: Somalia Grid Analysis, University of Tuscia	May 2025
• Analyzed Somalia's energy landscape, focusing on the transition from high-cost diesel generation to solar renewable infrastructure, utilizing Banadir Electric Company (BECO) as a primary case study. • Developed strategic recommendations for Demand-Side Management (DSM) and hybrid system optimization to improve energy affordability and grid reliability in post-conflict environments.	
Energy Storage Systems Design for 300 kWp PV Plant, University of Tuscia	May 2025
• Designed and comparatively analyzed energy storage solutions, including Battery Energy Storage Systems (BESS) and Solid Metal Hydrides (Hydrogen), to mitigate solar intermittency. • Evaluated system capacity requirements to capture surplus PV generation and ensure grid stability during peak demand periods.	
Optimization of a Semi-Automatic Production Line, Politecnico di Milano	Oct 2023 – Feb 2024
• Developed a discrete-event simulation model in Arena to analyze system performance, identifying bottlenecks and high operational costs. • Designed and tested short-term and long-term optimization policies, providing recommendations that improved system throughput and efficiency. • Utilized MATLAB and optimization techniques for data analysis to support decision-making.	

Manufacturing Systems Engineering Laboratory, Politecnico di Milano

Sep 2023 – Jan 2024

- Developed a two-stage stochastic model in MATLAB to optimize production planning and minimize machinery/labor costs under uncertainty.
- Conducted MTTR & MTTF analysis to identify system bottlenecks and evaluated buffer reallocation strategies to enhance throughput.
- Processed 10-week production data to analyze OEE and identify key system inefficiencies.

Certifications & Professional Development

- **Infrastructure & Energy:** Infrastructure Operations and Maintenance (ADBI, 2024), Solar Energy Systems Overview (University at Buffalo, 2022), Green Investments: Renewable Energy (ADBI, 2021).
- **Management & Finance:** Planning for Monitoring and Evaluation (Philanthropy University, 2020), Managing Project Finances (Philanthropy University, 2021).
- **Sustainability & Technical Skills:** Autodesk Certified Professional: AutoCAD (Autodesk, 2023), Circular Economy: Designing Out Waste (ADBI, 2024), Cybersecurity (ADBI, 2024).

Language Skills

- **English:** Full Professional Proficiency (C1)
- **Somali:** Native
- **Arabic:** Intermediate (B1)
- **Italian:** Elementary (A2)

References

Professor Giovanni Lugaresi

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Politecnico di milano

Professor Abdalla Antar

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Court of Armed Forces