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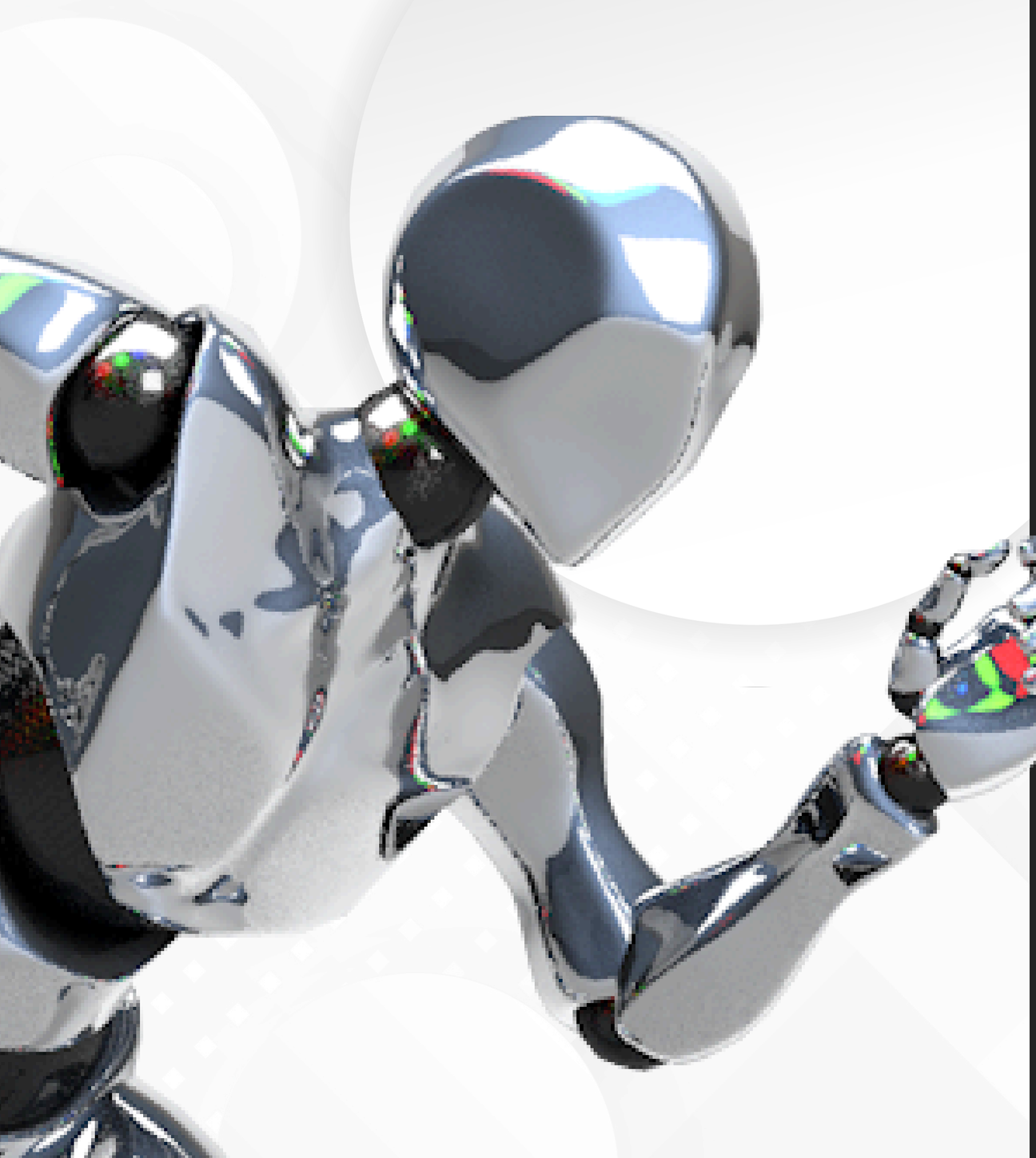
TELMEKOM
The future is easy

Shaping the Future of Automation and Intelligence

Organization: NOI Hackathon SFSCON Edition

7-8 November 2025

Github: https://repos.hackathon.bz.it/2025-sfscon/team-11



Introduction

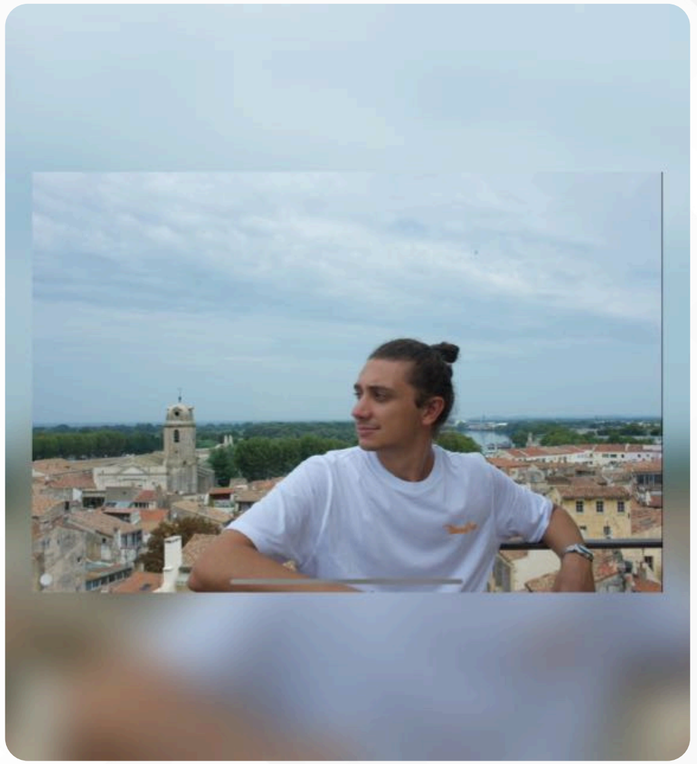
Industrial robot monitoring & task management data centralized platform

- 📊 Real-time robot tracking (cleaning, delivery, lifting)
- 📋 Task assignment & monitoring
- 📈 Performance analytics and predictions
- 🖥️ Distributed desing system architecture

The team members

Ettore Miglioranza

- Role: Frontend Developer
- Skills: User interface design, web development, user experience



Matteo Massari

- Role: Backend Developer
- Skills: Server-side logic, API management, database development

Anthony Tricarico

- Role: Data Analytics & Frontend Developer
- Skills: Data analysis, visualization, frontend implementation

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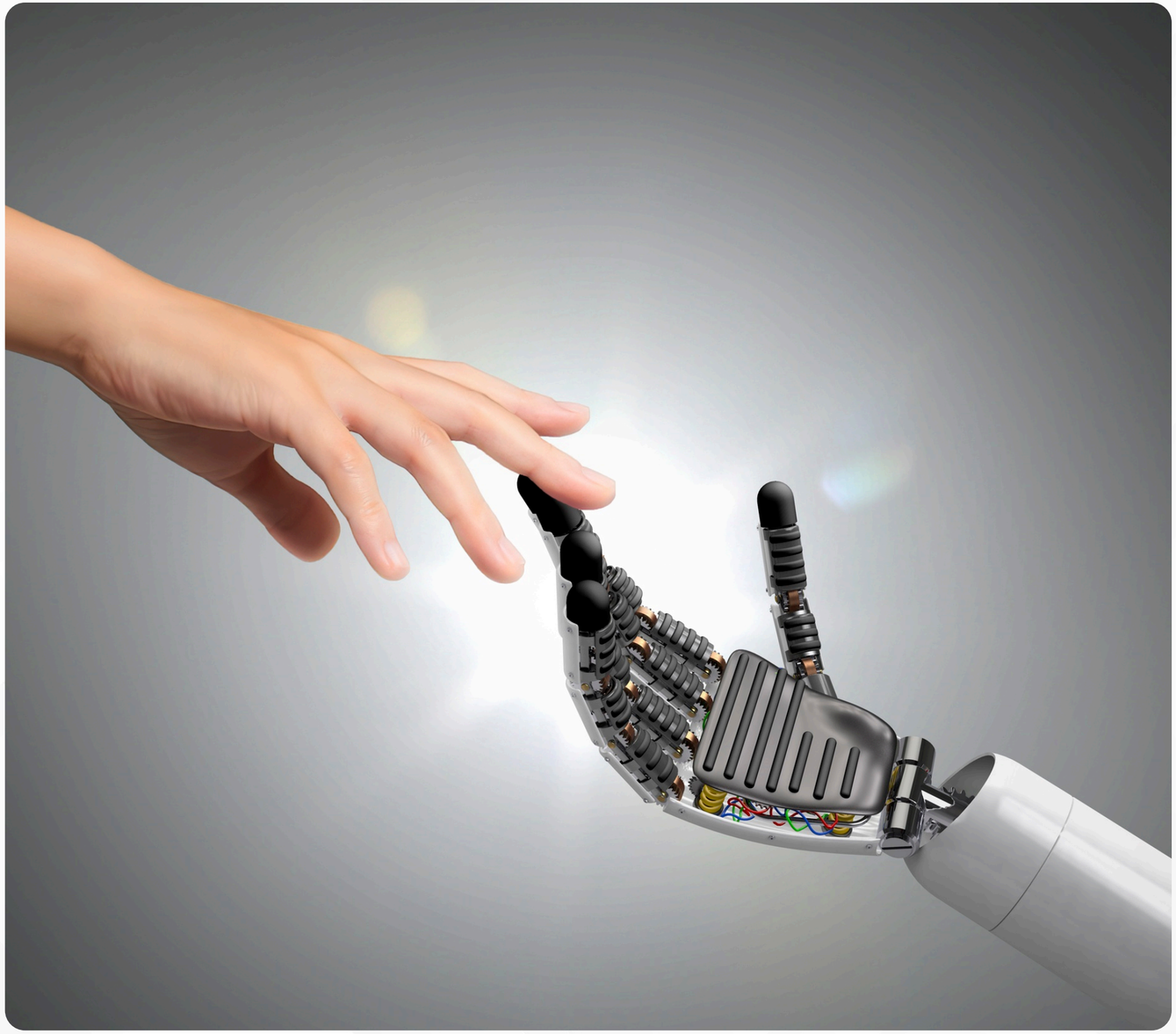
Centralized Multi-Robot Fleet Management Platform

How It Works

- Centralized Data Management
  - Faster query
  - structured data
  - better reporting on customer
  - Easy collection of data for ML
- Offer an experience that is tailored to the customer
  - personalized insights about robot usage
  - prescheduling of maintenance appointment with forecasting of robot maintenance



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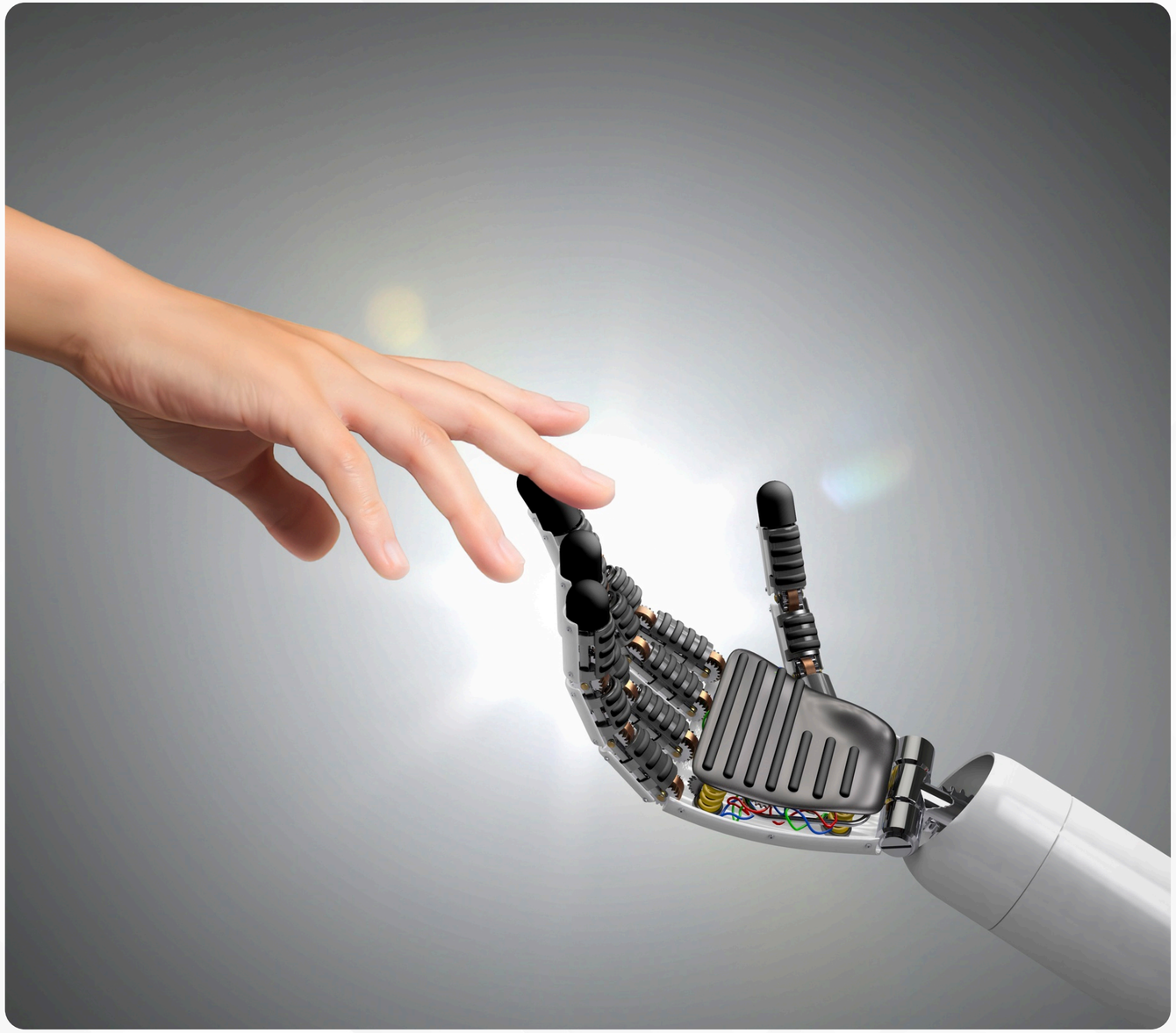
Centralized Multi-Robot Fleet Management Platform

How It Works

- User-friendly recommendations for more efficient usage of robots:
  - automatic suggestion about forniture arrangement in the space
- Forecasting
  - time and money saving (repairing the robot before it breaks, it will cost less because it will remain in maintenance for a short period of time)
  - ML alghorithm to predict the time it will take for the robot to complete a task



Methodology

Tech Stack

- Python + Streamlit - Web dashboard
- Docker - Containerization
  - for scalability and isolation
- Postgres - Structured Database
  - for structured data and easy and fast querying
- Serving layer with fastAPI
  - load distribution for the database
- Computation layer
  - perform KPI computation
  - allow prediction