

Generative Al applications in manufacturing industry

(Transforming Operations and Innovations)

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Manufacturing Innovation Valley





Customized Product Design

Challenges/Needs:

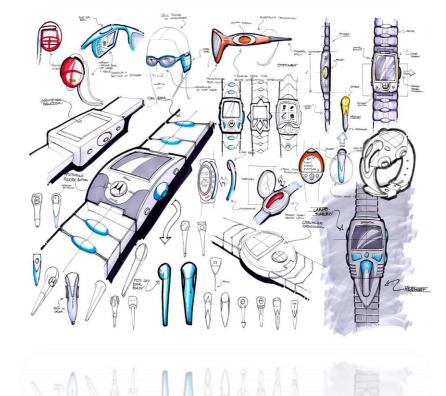
- Personalization
- Mass customization complexity
- Data collection and privacy
- Cost and scalability
- Design and engineering constraints

Solution:

- Advanced CAD and CAM software with datasets patterns
- Data analytics and machine learning
- Modular design components adapts to user preferences
- Collaborative design platforms with explainable AI techniques

Benefits:

- Faster "ready to sell"
- Market differentiation
- Reduced inventory costs
- Reduced waist







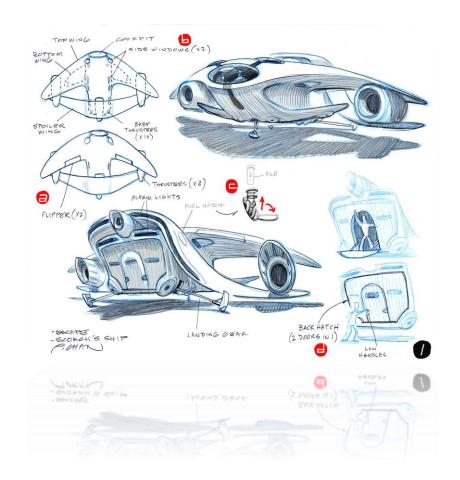
Customized Product Design

Development Challenges:

- Mass customization complexity
- Data collection and privacy
- Design and engineering constraints

Deployment Challenges:

- Cost and scalability
- Collaborative design integration
- Supply chain adaptation







AI-Powered Collaborative Robots

Challenges/Needs:

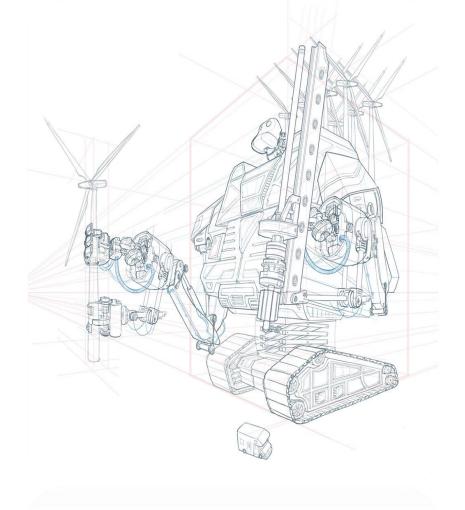
- Labor shortages
- Programming complexity
- Flexibility in production operations
- Safety

Solution:

- Advanced sensor technology
- Intuitive programming interfaces
- Comprehensive integration platforms
- Robust data security measures

Benefits:

- Enhanced productivity
- Improved safety
- Reduced production costs
- Cost efficiency
- Market competitiveness









AI-Powered Collaborative Robots

Development Challenges:

- Algorithm complexity
- Hardware integration
- Interoperability
- Real-time decision making
- Sensor integration
- Al training infostructure

Deployment Challenges:

- Workforce training
- Collaborative workspace setup
- Legal and regulatory compliance
- Maintenance, support and upgrades







The Field for Actions



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RESEARCH AND INNOVATION AREA FOR AI APPLICATIONS IN MANUFACTURING

