

Functional Requirements

IEEE: 3.2 | ISO: Functionality

- Develop AI-powered solutions for real-time health data analysis
- Engineer IoT-based automation systems for real-time infrastructure monitoring
- Design and deploy machine learning models for defect detection in PCB manufacturing
- Develop CNN-based AI models for classifying ovarian cancer subtypes
- Implement Explainable AI for diagnostic transparency and transfer learning
- Optimize model performance with hyperparameter tuning and data augmentation
- Develop AI-powered deep learning systems for detecting defects in printed circuit boards
- Design and implement scalable solutions for real-time multi-class defect classification
- Build AI-driven real-time health monitoring systems for predictive analytics
- Implement user-friendly dashboards with personalized health recommendations

Non-Functional Requirements

IEEE: 3.3 | ISO: Usability

- Ensure high accuracy in AI-powered solutions
- Optimize predictive analytics and decision support
- Improve patient care insights
- Enhance operational efficiency and optimize resource utilization
- Improve accuracy, scalability, and production efficiency
- Ensure high accuracy in defect detection
- Boost model adaptability and enhanced generalization
- Ensure high accuracy in real-time multi-class defect classification
- Ensure high accuracy in real-time health monitoring systems

Business Rules

IEEE: N/A | ISO: N/A

- Use AI and machine learning to drive business decisions
- Implement IoT-based automation for infrastructure monitoring
- Use machine learning for defect detection in PCB manufacturing
- Use CNN-based AI models for ovarian cancer subtype classification
- Implement Explainable AI for diagnostic transparency and transfer learning
- Optimize model performance with hyperparameter tuning and data augmentation
- Use AI-powered deep learning systems for defect detection in printed circuit boards
- Implement scalable solutions for real-time multi-class defect classification
- Use AI-driven real-time health monitoring systems for predictive analytics

Constraints

IEEE: 3.4 | ISO: Portability

- Limited data availability for AI model training
- Limited infrastructure for IoT-based automation
- Limited computational resources for machine learning model deployment
- Limited expertise in AI and machine learning
- Limited budget for cloud services and infrastructure

Assumptions

IEEE: 3.5 | ISO: Maintainability

- Availability of required data for AI model training
- Availability of infrastructure for IoT-based automation
- Availability of computational resources for machine learning model deployment
- Availability of expertise in AI and machine learning
- Availability of budget for cloud services and infrastructure