

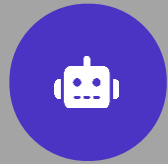
Predicting Software Defects In Design



**Revolutionizing software quality with
proactive AI-driven defect forecasting and
intelligent risk management solutions**

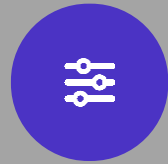
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Agenda



01. The Challenge

The unique solution for predicting defects early, when they are cheapest to fix



02. Key Features & Capabilities

Core predictions for defect density, escaped defects, and comprehensive benchmarking.



03. Target Users & Applications

How different teams leverage AI predictions for optimized testing and management.



04. Solution Demo & Next Steps

Live forecasts in action and how to get started with trials.



The Software Defect Challenge

Why Early Prediction Matters

The Cost Reality

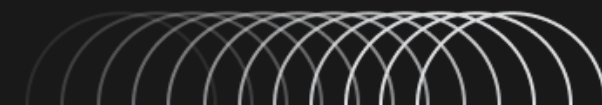
Software failures cost the US economy **\$1.81 trillion** annually (2022). Technical debt adds another **\$1.52 trillion**.

The Hidden Risk

Cost of fixing latent defects continue rising year-over-year (42% increase 2018–2022).

The Solution Opportunity

Predicting quantity of defects is first step in shifting to the left. Requs Ai Edge Case predicts where they are hiding.



The Requs AI Advantage

Traditional Reactive Approach – Used Late in Cycle

**C-SFRAT, 3S Star, Validata Sense.ai,
ContextQAQMetry
Lambda test, etc. are used late and
require failure data**

Requs AI Shift-Left Approach

**Data driven
predictions
orders of
magnitude more
accurate than
guessing**

**AI-Powered from
world's largest
defect density
benchmarking
study**

No need to wait for failure data

Requs AI Predict: Defect Arrival Forecasting

Early Prediction

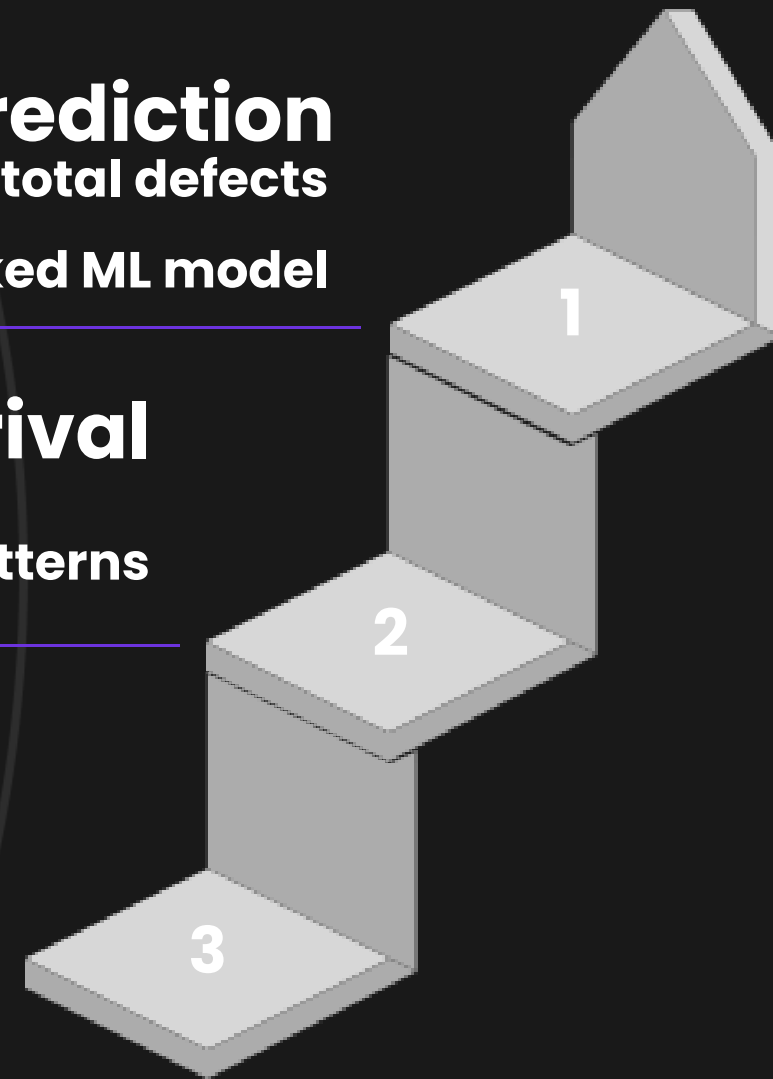
Predict defect density and total defects
via locked ML model

Forecast Escaped Defects Arrival

Visualize defect accumulation patterns

Manage defect pileup proactively

Don't be blindsided by unplanned
interruptions due to defect fixing



689+

Factors analyzed

World's largest

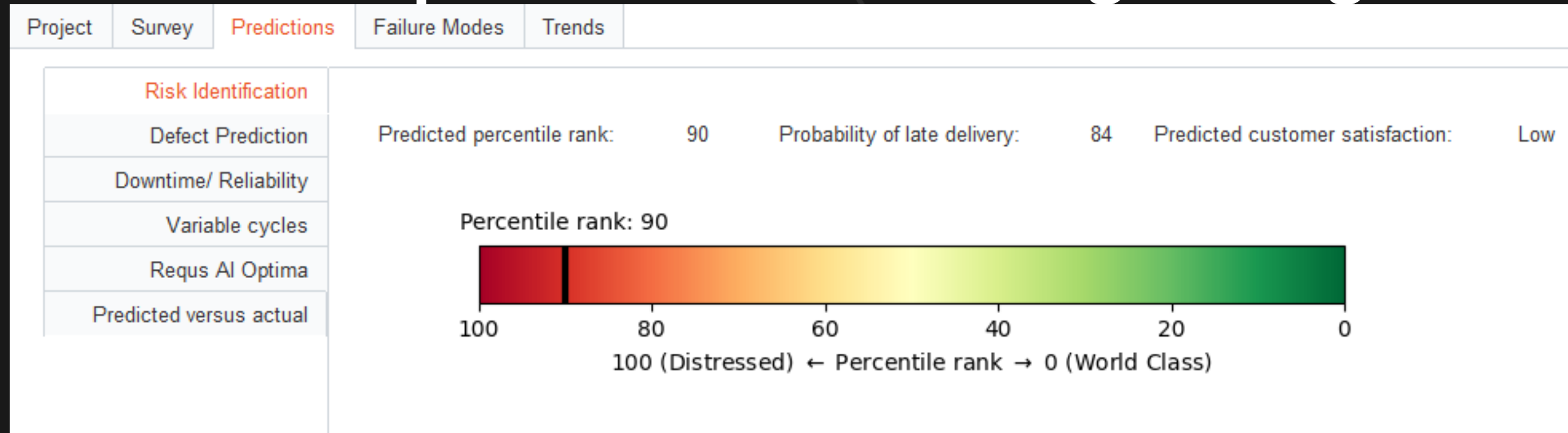
defect density benchmarking study

Early Defect Prediction Factors

Built on USAF Rome Laboratories' 1987 prediction model foundation (enhanced since 1993), our benchmarking study identified 689 total factors across five critical categories that accurately predict defect density and program success.

Factor Category	Count	Key Examples	Assessment Method
Product	50	Size, complexity, design patterns	Static analysis tools
Product Risks	12	User risks, regulations, maturity	Risk assessment
People	38	Turnover, experience, team ratios	Team analysis
Process	121	Standards, compliance, procedures	SEI CMMi, ASPICE
Technique	302	Methods, tools, MBSE approaches	Technical audit
Non-Correlated	166	Factors that don't predict success	Benchmarking data

Data predicts better than guessing



Answer Questions

Answer as many questions as possible about your project, including people, practices, techniques, tools, and risks. The more questions you answer, the more accurate your results will be.



Machine Learning Analysis

The machine learning model processes your inputs and predicts risk levels using benchmarked data.



Risk Assessment Results

Receive comprehensive risk identification with percentile ranking and outcome probability predictions for decision making. Requs Ai Optima identifies how to reduce the risk with the least effect on the schedule

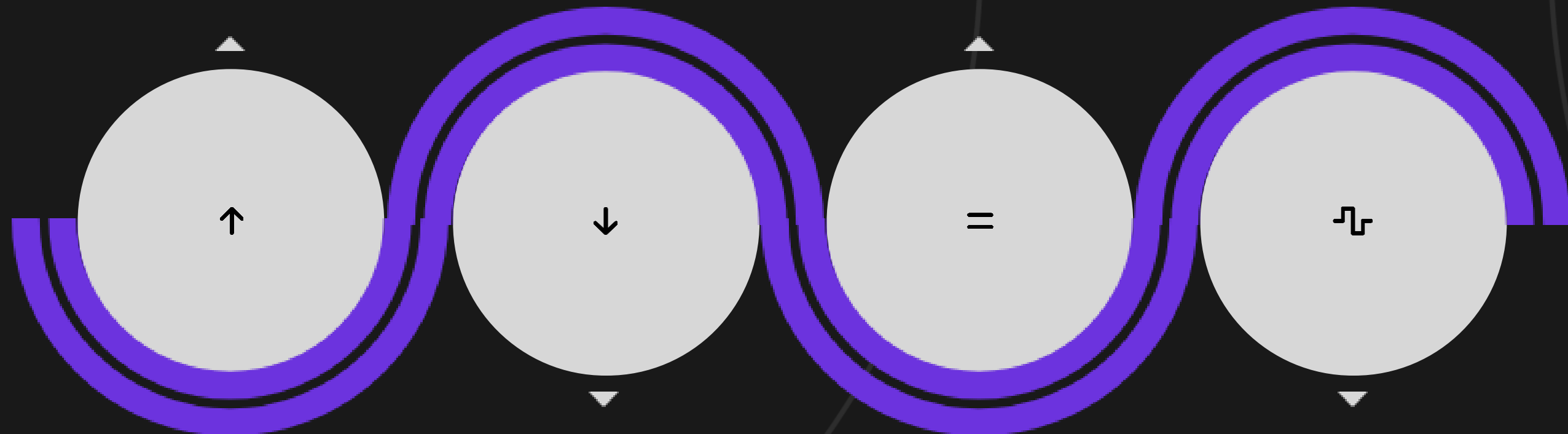
Escaped Defects Arrival Forecast

A good estimate of the total number of defects is nice. But estimating when they will arrive is even better.

Defect pileup is a constant risk for both Agile and Waterfall development methodologies, necessitating continuous monitoring and proactive management to prevent accumulation.

Visual Trend Analysis

Our forecasts show multiple program increments and releases over time, allowing you to visually see if accumulated defects is increasing or decreasing across development cycles.



There's no comparison

 Requs AI Defect Prediction ML-powered, proactive	 C-SFRAT Reactive, test- phase	 Validata Sense.ai AI-driven QE	 ContextQA AI test automation	 SonarQube Static code analysis	 Jira Plugins Defect management	 LambdaTest TI AI test analysis	 QMetry DevOps test mgmt
PREDICTION TIMING							
Proactive Before coding starts	Reactive During & after testing and operational phases	Reactive During & after coding	Reactive During & after coding	Reactive After code is written	Reactive After a defect is found	Reactive During & after test execution	Reactive During testing lifecycle
NEEDS NO HISTORICAL OR TESTING DATA							
Yes	No	No	No	Partial Only predicts defects from code	No	No	No
HOW DEFECTS ARE MEASURED							
ML model based on Q&A about dev practices & scope size	Forecasts known discovery times into future	Analyzes existing data to predict bug probability in a specific area	Counts logged defects	Quantifiable bugs, vulnerabilities & code smells found in code	Counts logged defects	Analyzes test run data for failures & flaky tests	Counts logged defects
CORE FUNCTION							
Early prediction of defects in and escape testing	Determines if failure rate meets requirements	AI-driven Quality Engineering	AI-driven Test Automation	Static Code Analysis	Defect management vs predictions	AI-powered Test Analysis	DevOps-ready Test Management

People who use Requs Ai Predict

Software project risk management plan

The following risk management plan contains identified risks, project assessment team members, risk probability, impact, priority, action plan, etc.

Risk Plan for Project	Project ABC			
Assessment Team Members	Michael, Bella, Quincy and Sophia			
Risk	Probability	Impact	Priority	Action Plan
Managers will shift operations offshore which will need software projects to go global	Medium	High	High	Michael will collect requirements more accurately and carefully
Bella will be terminated from project due to failure to fix software bug	High	Medium	High	If Bella is terminated, she will give her 20% time in project review with Quincy
Reports of failed tasks will be required	Low	Low	Medium	For this risk, Michael will work with Sophia for re-estimation of software tasks
Expected delay in project due to late software installation	High	Medium	High	• Negotiate with vendor for delayed installation • Add test here
Time, budget and scope misalignment if software project requirements are not finalized during implementation	Low	Low	Medium	• Ensure requirements and its details are evaluated by stakeholders

This is a 100% editable, adapt it to your needs and custom your audience's situation

Software Management

- Quickly identify programs about to go off rails.
- Gain quantitative evidence to justify critical changes.
- Make data-driven decisions for project success.



Software Test QA

- Identify and predict testing risks early in development.
- Understand sensitivity of various test methods.
- Optimize fault injection and testing strategies.



RAM engineers

- Understand how high-risk translates to low availability.
- Enable first step in availability predictions.
- Improve overall system reliability and safety.

Get Started: Licensing and Trial Options



Flexible Licensing

- **Dedicated and floating license options available**
- **Yearly subscription or perpetual licensing models**
- **Cloud and enterprise deployment configurations supported**



Schedule Demo

- **See your hidden defect risks today with a personalized demonstration session**
- **Contact sales@missionreadysoftware.com for scheduling**
- **Personalized demonstration of your specific use case**
- **Discover hidden defect risks in your projects**



Start Trial

- **Get hands-on experience with desktop version or try the cloud trial immediately**
- **Desktop trial version available for download**
- **Cloud trial at <https://requsaipredict.com> instantly accessible**
- **Experience full functionality with sample projects**



**Ready to predict defects before
coding begins?**

**Contact us at
sales@missionreadysoftware.com for a
demo today.**

