AI LAB
by nvisia

MARK PANTHOFER

Spec-Driven AI Legacy Transformation

Ditch Legacy Technical Debt with AI-Enabled Greenfield Advantages.

GOAL: Expert-in-the-loop AI harvesting system specifications to drive AI-assisted greenfield development

This proof-of-concept demonstrates a phased, structured method for updating legacy systems without the risks of a complete "big-bang" rewrite.

It connects AI systems with code repositories, documentation, and developer tools to reverse-engineer existing applications into generative system specifications. Software engineering experts then use these specifications to design and build modern solutions with well-planned architecture. This step-by-step redevelopment replaces large-scale upgrades, maintaining stability and quality throughout.

Human expertise remains essential, particularly in design, architecture, and quality assurance, while directing AI agents to speed up development, automate testing, and transform platforms. The outcome is a high-quality cloud-native application created through automation guided by experts, improving speed and accuracy while lowering risk.

Highlights

- AI-amplified expertise
- Legacy systems knowledgebase
- Spec-driven AI development
- Mine assets, not tech debt

★ Key Features

- Guided AI extracts legacy codebases into clean specifications
- Empowers Java teams to build modern Java apps from scratch
- Generates fresh UIs based on extracted business requirements
- Expert architects guide AI design patterns and architecture
- Accelerates delivery of cloud-native solutions

Applicable Use Cases

- Migrating to cloud by rebuilding with cloud-native apps
- Eliminating tech debt via replacing legacy with greenfield
- Reducing risk by retiring unsupported/outdated Java systems
- Reducing spend tied to legacy tooling and licensing
- Delivering mobile-ready and modern web interfaces

GitHub Copilot   OPENSPEC   Java   Gemini   Grok

Claude
Code, Sonnet 4.5, Opus 4.1

Unblocked   Model Context Protocol

OpenAI
GPT 5, GPT 5.1 Codex, GPT-OSS 120b

Visual Studio Code

Explore what happens when engineers get curious

The **AI Lab** is where nvisia's engineers and our clients experiment, explore, and build with the latest in AI and emerging tech. See real-world demos from our lab — not just ideas but functional innovations in:

- AI-powered software solutions
- Intelligent automation
- Data science & machine learning
- Custom AI integrations

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Engineering the Future with AI

Strategic Focus Areas

↘ **Frameworks & Playbooks**
Codifying reusable architectures and best practices for consistent, scalable AI delivery.

↘ **Security & Compliance**
Embedding data security, model integrity, regulatory alignment, and safe prompt engineering into every stage of the AI lifecycle.

↘ **Human-in-the-Loop AI**
Designing workflows where AI accelerates analysis and automation, while human oversight and expert review ensure accuracy, reliability, and real-world relevance.

↘ **Responsible AI & Ethics**
Creating principles, reviews, and tooling that ensure AI is transparent, fair, and aligned with organizational values.

↘ **Driving Value**
Prioritizing high-impact opportunities, measuring ROI, and ensuring AI initiatives deliver meaningful business outcomes.

↘ **Improving Predictability**
Using techniques such as Spec-Driven Development to enhance model accuracy, reproducibility, and trustworthiness.

Come Talk to Us

Ask questions, see the tech in action, or just chat with our team.
We're here to share what we've learned — and to learn from you too!

Real demos   **Ready to scale**   **Built by engineers**

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