

Vibe Coding: Promises and Perils

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Vibe coding represents a groundbreaking shift in software development, emerging as a concept where natural language, spoken by a human, can create working prototypes of a system with the aid of Generative AI. Though GenAI tools like Copilot and Replit have been used by information technologists to create working code for a while, the phrase was introduced by computer scientist Andrej Karpathy in February 2025. The idea is to focus on creating the "vibe" of software rather than detailed code, enabling users to translate ideas into executable applications within hours or even minutes.

The core philosophy of vibe coding embraces "Code First, Refine Later," allowing entrepreneurs, managers, and developers to bring concepts to life rapidly and refine them based on feedback. This approach has captured significant attention across the world, as people from various domains embrace the concept beyond its initial developer-focused intent. For example, users are coding up simple games, those in offices are creating spreadsheet scripts for data analysis, students are creating code for projects and assignments, and marketers are creating basic apps and websites.

Survey and Findings

We conducted an extensive survey of 868 individuals across different professions and demographics, to explore the penetration of vibe coding awareness and practice. Our findings are quite stark: 94% of surveyed individuals have heard about vibe coding, while 54% actively practice it. However, this adoption comes with some caveats – 60% of individuals know fewer than 5 people in their network who are embracing vibe coding, indicating a lack of widespread awareness despite individual adoption.

The survey results paint a mixed picture of confidence in the method. While 54% believe vibe coding provides strategic advantages for organizations in terms of time to market, overall confidence remains moderate with an average rating of 3.2 out of 5 (on a rating scale). Notably, 53% of individuals consider vibe coding unsuitable for scalability and security, highlighting significant concerns about the technology's production readiness.

Impact

Vibe coding's influence spans multiple domains and user communities, each experiencing distinct benefits and challenges. Developers report the highest impact, benefiting from faster debugging, data model creation, and the ability to focus on complex code while automating basic development tasks. However, they face concerns about lack of complete control over code development and potential mismatches between their coding style and AI-generated code.

Enterprises experience medium impact through reduced development costs and faster time-to-market for complex systems. Yet they grapple with heavy dependence on debugging for

complex scenarios and significant barriers to scaling. Product and program managers leverage vibe coding for rapid requirement translation into working prototypes and cost reduction, but risk overcommitment based on prototype results and misaligned product design goals.

Entrepreneurs find particular value in faster feedback loops and earlier investor pitches with working demonstrations. However, they may compromise scalability considerations in pursuit of funding, and basic features might not accurately reflect true market needs.

Security and Scalability Concerns

The study identifies several critical concerns that challenge vibe coding's long-term viability. Security breaches represent a primary vulnerability, as vibe-coded products often lack proper security protocols established by information security teams. A notable example involves Replit, a vibe coding tool that accidentally wiped a project database without recovery options, illustrating the real-world risks associated with these platforms.

Scalability emerges as a nightmare for vibe-coded applications. While the technology excels at generating functional prototypes, it requires significant human intervention to develop scalable code capable of supporting millions or billions of users at a global level. This limitation creates a fundamental gap between prototype demonstration and production readiness.

A wide knowledge gap exists between users who understand coding and system development fundamentals and can leverage vibe coding effectively versus those who rely purely on natural language input but struggle with issue resolution and deployment. This disparity limits the technology's accessibility despite its intended broad user base appeal.

Additionally, the absence of a value-driven roadmap across multiple vibe coding tools creates confusion for users. While the variety provides options, it lacks clear direction for improvement and may lead users to abandon the technology when alternatives emerge or effectiveness diminishes.

Future Outlook and Recommendations

This study shows that vibe coding represents a revolutionary concept with transformative potential for productivity enhancement. However, sustainable adoption requires addressing fundamental security concerns and improving user-developer friendliness through detailed security audits and clearer code documentation with comments and syntax references.

Future development could focus on creating developer and user-friendly versions that address different user capabilities while emphasizing value creation through productivity gains. The technology must evolve to become synonymous with security, productivity, and scalability in the AI landscape.

Vibe coding's success ultimately depends on establishing a sustainable and acceptable framework for its target user segment. Its long-term viability requires careful navigation of security vulnerabilities, scalability limitations, and user experience challenges. The method stands at a critical juncture where addressing these concerns will determine whether vibe coding becomes an integral part of our technological future or remains a promising but limited experimental tool.

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