zenitech

Reinventing the Software Engineer

Why AI Engineering is the next strategic mandate

Dr. Bertalan Forstner
Emerging Technologies Strategist
bertalan.forstner@zenitech.co.uk

November 2025

CONTENTS

A role, redefined by necessity

In the coming years, one role will gain increasing prominence across the software landscape, driven by long-term technological shifts: the AI Engineer. This emerging position reflects a deep transformation. It brings together elements of machine learning, fullstack engineering, and intelligent orchestration into a unified discipline.

For organisations developing or operating digital products, this shift directly affects how software is built, maintained, and improved. Zenitech views this progression as a research trend and a pragmatic solution addressing our clients' evolving business requirements: quicker delivery, more intelligent automation, and more adaptable systems.

Our industry conversations are changing in their tone. Clients are no longer curious about whether AI might benefit them, they know it can. Instead, they want to understand where it can make an impact and what kinds of teams and expertise are required to deliver results and remain relevant in markets where AI is already reshaping the rules. In most cases, the solution is not a single research hire. **It is about creating development teams that can integrate AI tools and capabilities into real products.**

The AI Engineer represents this hybrid.

Why this matters now

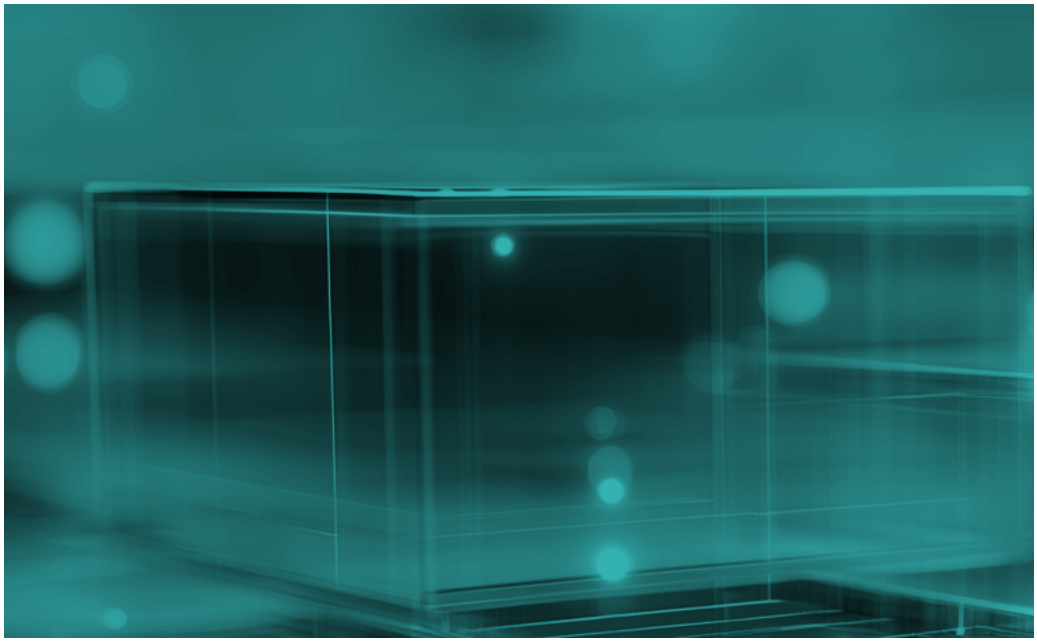
The AI Engineer role is already taking shape. A developer-focused study titled "Developers, Reinvented" by GitHub CEP Thomas Dohmke identifies a clear pathway through which developers evolve from initial experimentation with AI tools to a more strategic, systems-level collaboration with intelligent agents. **This mirrors what we see among our partners: developers start by using AI assistants for productivity, and end up redesigning workflows to make AI a core part of their product pipelines.**

In practical terms, this evolution means that an AI Engineer actively builds with AI. They understand how large language models, vector databases, and orchestration frameworks work under the hood, and can integrate them into codebases in a controlled, scalable way. They implement architectures such as Retrieval-Augmented Generation (RAG), multi-agent systems, and autonomous orchestration pipelines. On a daily basis, they rely on advanced coding copilots and AI-powered IDE integrations to accelerate delivery, enforce coding standards, and prototype intelligent behaviours directly within development environments. In other words, they make AI a living part of the software architecture, not an add-on.

Chip Huyen, in her 2025 book AI Engineering, outlines a framework that further supports this transformation. She presents AI engineering as a layered discipline, composed of application development, model adaptation and refinement, and technical infrastructure. According to her, an AI Engineer is a fullstack engineer where the AI is included in the stack. **We've observed that our fullstack and mobile developers adapt quickly to this way of working. They learn to move fluidly between layers, from data pipelines to prompt logic and inference optimisation, while maintaining a clear understanding of how each element contributes to end-to-end performance.** Engineers working in this space do not need to be experts in every aspect simultaneously. However, they are expected to navigate between these layers with a practical understanding of how each contributes to product goals.

This shift in focus aligns with current market forecasts. Gartner's Emerging Technologies and Trends Impact Radar places AI-Augmented Software Engineering among the developments likely to reshape industries within the next five years. The report highlights engineering roles that blend software development with AI system integration as central to this impact.
IDC's Future of Digital Innovation survey reports that nearly three-quarters of enterprise leaders plan to prioritise hiring software professionals who have experience integrating and orchestrating AI systems.

Furthermore, McKinsey's analysis on AI in software delivery shows that teams structured around AI Engineering principles are significantly faster at internal tool deployment and report stronger developer engagement.



Implications for organisations

Introducing AI Engineers into a software engineering organisation does not replace existing software professionals. Instead, it introduces a new interface between AI capabilities and software product development. These engineers play a central role in managing AI tools and frameworks. They are expected to build systems that account for the unique behaviours of AI models, to interpret and refine model outputs, and to design workflows where collaboration between humans and machines leads to better outcomes. **For our clients, this role translates into practical benefits such as shorter time-to-market for AI-enabled features, improved maintainability of systems using large models or third-party AI APIs, and higher confidence in compliance and data governance during AI integration.**

According to our experience at Zenitech, the professionals best prepared to grow into this role come from different diciplines. Fullstack developers often bring strengths in prototyping and interface design that are now increasingly valuable in AI-integrated applications. Others may transition from MLOps or DevOps, where they already manage system orchestration, performance constraints, and service deployment. **When we help clients structure AI development initiatives, these profiles often form the backbone of sustainable implementation teams.**

The educational system has yet to fully respond to this transformation. This presents both a challenge and an opportunity. Companies that keep close partnerships with academic institutions, such as Zenitech, are in a position to shape new learning pathways. We are already supporting programs that include AI integration projects, agent coordination exercises, and advanced design challenges. Zenitech is also a frequent presenter at university conferences.

How AI Engineers turn concepts into capability

The role of the AI Engineer becomes clear when developers start treating artificial intelligence as a natural part of the software system, rather than a separate module. At Zenitech, this is already part of our everyday practice. Each new Proof of Concept explores how AI can be built directly into the architecture, the business logic, and the development workflow. The AI Engineer turns these possibilities into working code and integrated product features.

Our next-generation content management systems are a good example. Earlier versions were primarily administrative tools; the current ones use AI to support draft creation, illustration generation, and reader interest analysis. The system now responds more precisely to user behaviour while streamlining the editorial process. Our AI Engineers redesigned the flow of data, model calls, and application logic so that the platform continuously learns from interaction patterns.

Another direction comes from our work in the financial sector. In our banking operations prototype, the Horizon Scanning feature compares internal policies with upcoming or publicly debated state regulations and proposes updates where necessary. This makes compliance risks visible early and helps institutions adapt faster. Here, the AI Engineer is responsible for both the analytical process and the integration of the model into a complex banking environment.

Our contract review systems have a similar impact. These applications analyse large document sets against natural-language criteria, helping legal and compliance teams reach conclusions much faster. AI is layered on top of traditional document management, enabling reviews that are not only quicker but also more consistent and verifiable.

In research, our teams are working on identifying and filtering deepfake user-generated content. AI Engineers here design multi-modal connections between text, image, and audio analysis modules to ensure that the system can recognise manipulation and also explain the reasoning behind its decisions.

Across these projects, a consistent pattern emerges: the AI Engineer bridges software development and intelligent systems. They understand how AI components work, how to integrate them into real architectures, and how to turn that understanding into measurable value for clients.

A change in mindset

However, thinking about AI as just another software library leads to missed opportunities. As the developers interviewed by Dohmke observed, the real benefit of AI assistance is not about saving time on tasks. The greater potential lies in expanding the scope of what teams can attempt and complete.

Supporting this change involves more than tool adoption. It requires fostering a culture that encourages experimentation, curiosity, and system-level thinking. At Zenitech, our experience with collaborative AI workflows shows that developers gain confidence, develop stronger design instincts, and become more engaged in outcomes when they work alongside AI systems.

AI Engineers are catalysts for this culture. They bring the methods and discipline needed to turn advanced AI tools into robust, scalable solutions.

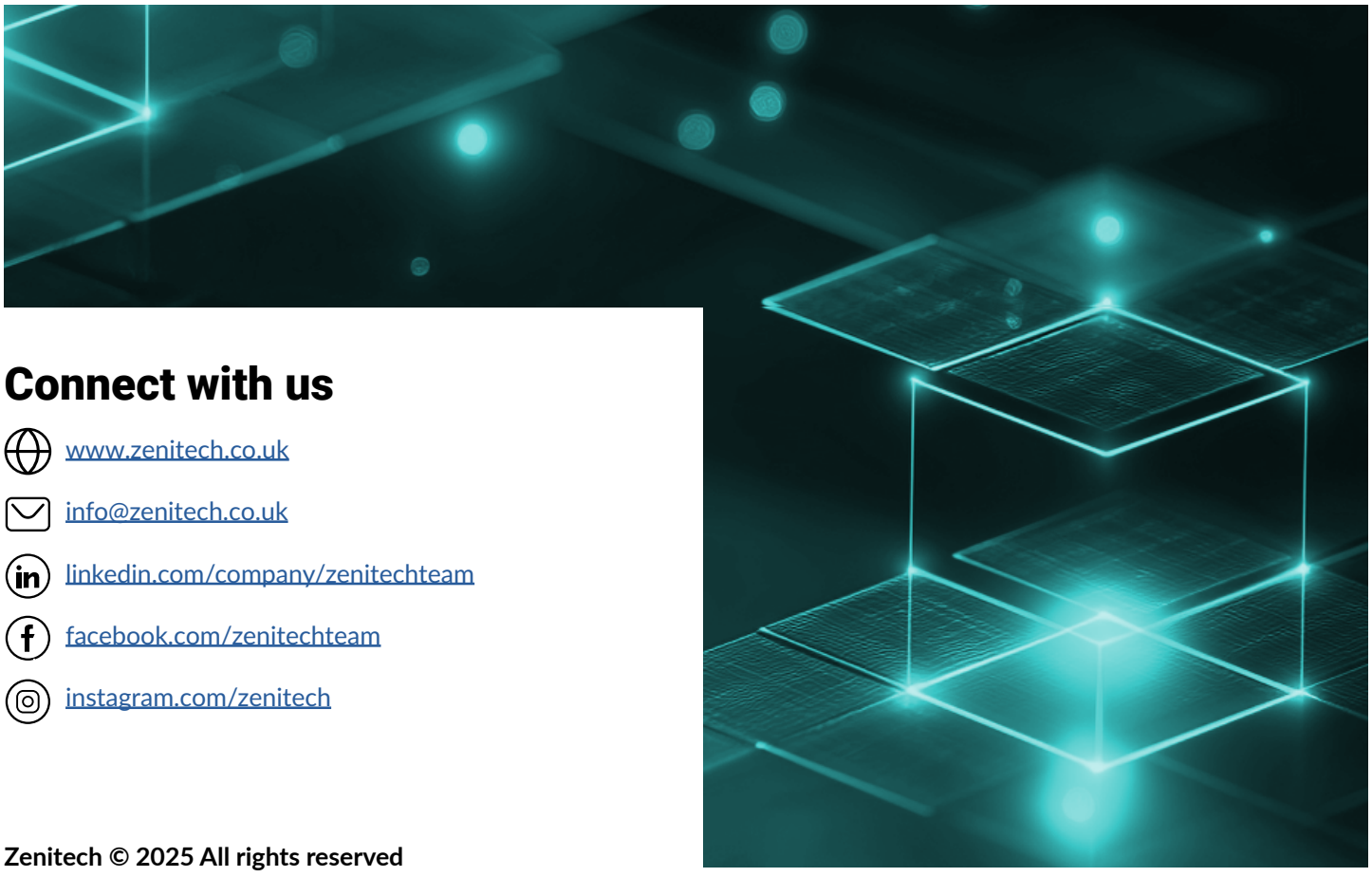
Conclusion: The AI Engineer is already shaping the future

The most adaptable organisations over the next few years will go beyond deploying AI in isolated functions. They will incorporate it deeply into their operating models, team structures, and development lifecycles. This integration depends on choices made at the engineering level: in architecture, in tooling, and in how teams work together.

The emergence of the AI Engineer marks a turning point in how we design software teams. Those who adapt first will be better equipped to lead the next phase of intelligent product innovation.

Zenitech continues to collaborate with clients across sectors who are taking this direction seriously. Through research initiatives, skill gap assessments, and capability development programs, we help build the foundation for this shift. We already employ AI Engineers today who are actively working to build AI directly into the software we develop, ensuring we stay ahead of the curve.

If your organisation is ready to make the next step in AI-enabled development, and you want to embrace AI within the solutions we build for you, we have the team to make it happen.



Connect with us

www.zenitech.co.uk

info@zenitech.co.uk

linkedin.com/company/zenitechteam

facebook.com/zenitechteam

instagram.com/zenitech