AUTUMN 2026 EDITION

The AI Delivery Gap Report

Germany · *Spotlight Bavaria*

The shortage has moved — from IT in general to the AI/ML engineers who take AI into production.

663,000
IT professionals missing in Germany by 2040 without countermeasures

< 0.5
suitably qualified candidates per AI/ML engineer job posting in many European countries

3,000+
AI/ML engineers in Munich — more than in any other EU city

jimmy.

By **Martin Javier Stojka**
CEO, Jimmy Technologies

INTRODUCTION

The bottleneck has moved

Germany is short of far fewer IT professionals than three years ago – yet 97% of companies with IT vacancies still report hiring difficulties. This report shows why: the bottleneck has shifted from IT in general to a small, highly specialised group. These are the AI/ML engineers who build AI systems – from LLM and RAG applications to custom models – and take them into production.

97%

of companies with IT vacancies report difficulties filling them

Bitkom, 2026

The AI Delivery Gap Report Germany is published twice a year, with a regional spotlight on Bavaria. It combines publicly available labour market data (Bitkom, IW Köln, interface, Index Research) with data from the day-to-day work of Jimmy Technologies. Jimmy provides companies with experienced engineers to augment their AI/ML and data engineering delivery capacity. It is written for every company that wants to build and scale its AI strategy and capacity – so it can plan realistically and avoid risks, delays and financial losses.

The report answers five questions

1. How large is the structural gap in the general IT labour market today and by 2040?
2. Why are AI/ML engineers the real bottleneck?
3. Where does Bavaria stand, and where does Munich stand?
4. Why does internal hiring so rarely succeed?
5. What does data from real placements show?

How to read it: Every figure is given with its source, survey period and definition. Where sources measure different things, we say so. Details are in the Methodology & sources section.

0 · AT A GLANCE

Three numbers that sum it up

The gap is structural, the bottleneck is AI/ML engineers, and Munich is its centre in Europe.

THE GAP IS STRUCTURAL

663,000

IT professionals could be missing in Germany in 2040 without countermeasures. Even if every domestic measure works, about half of this gap (357,000) remains – and it can only be closed with professionals from abroad.

Bitkom scenario, 2024



THE BOTTLENECK IS AI/ML ENGINEERS

< 0.5

suitably qualified candidates per AI/ML engineer job posting in many European countries.

interface/CEPS, 2025

MUNICH IS THE CENTRE

3,000+

AI/ML engineers work in Munich – more than in any other EU city.

interface, 2026

KEY TERMS

Same words, different measures

Several sources use similar terms for different measures. The following definitions apply throughout the report.

Three levels of AI talent · based on the interface classification

AI users
interface: Tier 0

People in non-technical roles with an AI connection, or with basic AI knowledge as users.

Software & data engineers
interface: Tier 1

Technical engineers in software development or data science who use basic ML methods but do not develop advanced AI systems.

AI/ML engineers
interface: Tier 2

Professionals who build, apply or research advanced AI applications (e.g. LLM and RAG systems, AI agents, generative models, computer vision, MLOps). **The focus of this report.**

Measuring the gap

AI Delivery Gap	The gap between companies' demand for AI/ML and their ability to deliver it with available talent – on time, at the required quality and at sustainable cost.
IT skills gap (Bitkom)	Extrapolated number of unfilled IT positions from a representative company survey. Gross figure: available unemployed candidates are not subtracted.
Job posting with AI reference (Index Research)	A job ad that names at least one AI technology from a continuously updated keyword list. Measures demand in job ads, not hires.
Scenario / trend projection	An "if–then" calculation: what happens if past trends continue unchanged.

Delivery models

Nearshore
Delivery from European countries with little or no time difference, e.g. the Czech Republic.

Offshore
Delivery from distant locations with a large time difference, e.g. UAE or Southeast Asia.

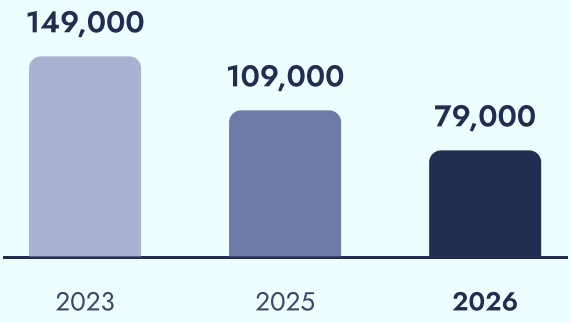
CHAPTER 1

The structural gap

The acute IT skills gap has shrunk since 2023, while the structural gap keeps growing. The two figures measure different things: 79,000 is today's level from a company survey; 663,000 is a scenario for 2040 without countermeasures, calculated in April 2024 when the gap stood at 149,000.

The Bitkom calculation also shows that even if every domestic lever works – more career changers, more graduates and trainees, older workers staying longer – about half of the gap remains open. It can only be closed with professionals from abroad.

Today: unfilled IT positions in Germany



Source: Bitkom 2026 · gap almost halved since 2023

2040 scenario: how far domestic levers go

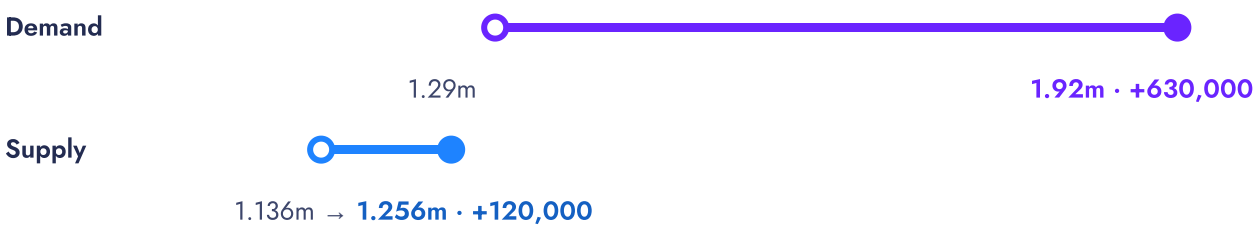
Gap without countermeasures
663,000

Remaining after all domestic measures
357,000

Needed from abroad to close it
321,000

Source: Bitkom, 04/2024 · scenario, not a forecast; all of IT

Demand outgrows supply, 2024 → 2040



Source: Bitkom, 04/2024

WHAT THIS MEANS

Domestic measures cover only about half of the gap. The other half depends on professionals from abroad – and all of Europe and the US compete for them. If they do not come to Germany, the work has to go to them via nearshore/offshore delivery.

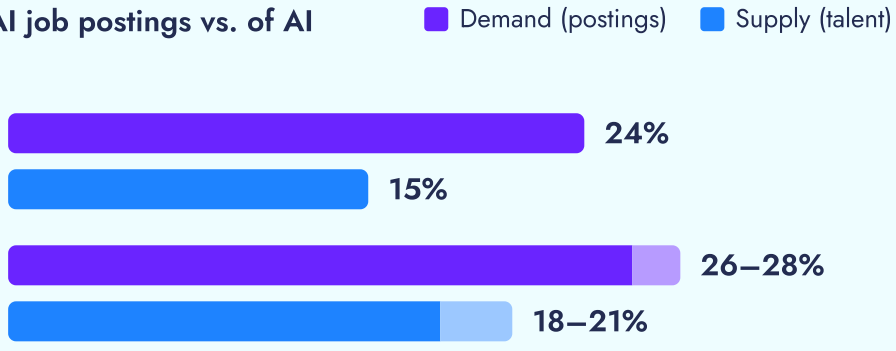
This is our conclusion, not a statement made by the studies cited.

CHAPTER 2

The bottleneck is AI/ML engineers

AI/ML engineers (interface: Tier 2) are the only skill level where demand in Europe clearly exceeds supply. For software & data engineers (Tier 1), supply and demand are broadly balanced.

AI/ML engineer share of AI job postings vs. of AI talent



Source: interface/CEPS, 07/2025 · job postings (Lightcast, May 2023 – April 2024) vs. professional profiles (Revelio Labs, April 2024). Lighter segment = range.

< 0.5

suitably qualified candidates per AI/ML engineer posting

Scarcity in many countries, not an exact count of missing people

interface/CEPS, 07/2025

~17,000

AI/ML engineers in Germany

4th worldwide (interface: Tier 2); profile data as of September 2025

interface, 04/2026

Fastest growth

in demand for AI/ML engineering skills among ICT specialists

Compared with AI users and software & data engineers (Tier 0 and 1), May 2023 to April 2024

interface/CEPS, 07/2025

~5,200

senior AI/ML engineers in Germany on LinkedIn (LinkedIn-suggested job titles "Senior AI Engineer" and "Senior ML Engineer")

Jimmy LinkedIn Recruiter search, 27 Oct 2026 · search by LinkedIn-suggested job titles; not comparable with interface's ~17,000

The figures come from three sources with different methods. interface/CEPS (2025) compares job postings with professional profiles in 19 European countries; the authors stress that the ratios are not shortage indicators in the strict sense. interface (2026) counts AI/ML engineers (Tier 2) based on profiles (Revelio Labs, September 2025). Index Research counts job postings with an AI reference in Germany.

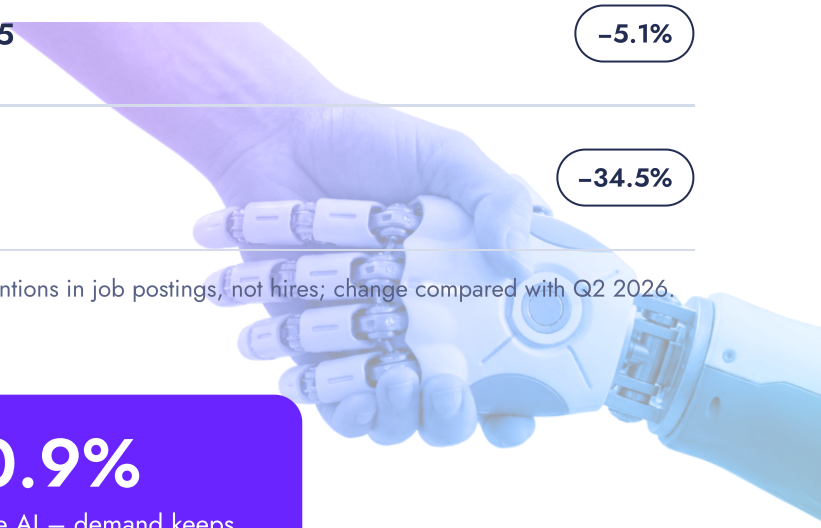
CHAPTER 2 · CONTINUED

Most requested AI skills in German job postings

Machine learning remains the most requested specific AI skill. The fastest growth is in RAG (+92.6%) and generative AI (+30.9%).

SKILL	MENTIONS, Q3 2026	CHANGE VS. Q2
Machine learning All AI technologies · #2	10,692	–3.9%
Generative AI All AI technologies · #3	8,351	+30.9%
LLMs NLP & linguistics · #1	6,281	+14.1%
RAG ML models & techniques · #1	3,988	+92.6%
PyTorch ML frameworks & libraries · #1	2,465	–5.1%
Data mining ML models & techniques · #3	679	–34.5%

Source: KI-Kompetenzmonitor (Index Research), Q3 2026 · mentions in job postings, not hires; change compared with Q2 2026. RAG = retrieval-augmented generation.



+92.6%
RAG — the fastest-rising skill

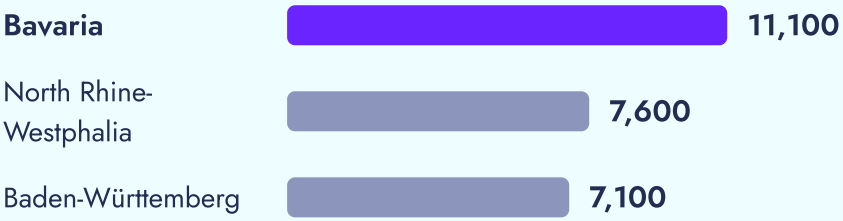
+30.9%
Generative AI — demand keeps broadening

CHAPTER 3 · SPOTLIGHT

Bavaria / Munich

Bavaria is Germany's largest market for AI job postings, and Munich has more AI/ML engineers than any other EU city. At the same time, that doesn't make them easier to hire. The problem is still finding the senior profile, quickly and at a sustainable cost.

AI job postings by federal state, Q2 2026



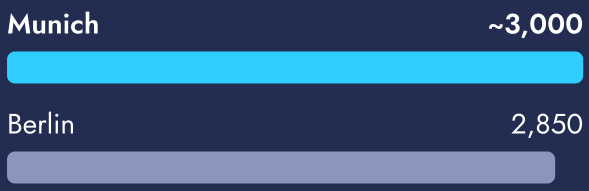


11,100 of 44,800 AI postings (own calculation)

Source: Index Research, 07/2026 · postings naming at least one AI technology

NO. 1 AMONG EU CITIES

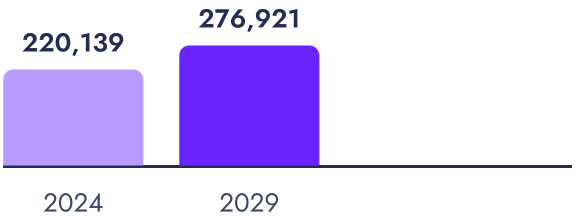
AI/ML engineers



Source: interface, 04/2026

LARGEST GROWTH OF ALL OCCUPATIONS

+26% IT employment in Bavaria



IW for IHK Arbeitsmarktradar Bayern 2026 · trend projection

898

senior AI/ML engineers in the Munich area on LinkedIn – about 17% of the ~5,200 in Germany

FOR PERSPECTIVE

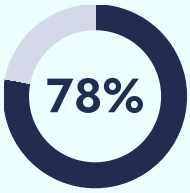
Around 900 senior AI/ML engineers in the Munich area – while employers in Bavaria published 11,100 job postings with an AI reference in a single quarter. The two figures come from different sources and definitions, so they are not a ratio; but the orders of magnitude show how small the senior pool is. Both interface (~3,000 of ~17,000) and our own search (898 of ~5,200) place about one in six of Germany's AI/ML engineers in the Munich area.

Jimmy LinkedIn Recruiter search, 27 Oct 2026 · LinkedIn-suggested job titles "Senior AI Engineer" and "Senior ML Engineer"

CHAPTER 4

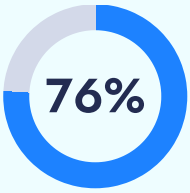
Why internal hiring fails

Almost every company with IT vacancies struggles to fill them, and the reasons are mainly salary, qualifications and language.



of all companies currently see a shortage of IT professionals

2025: 85%



expect the shortage to worsen

2025: 79% · slightly eased, but high

Companies with IT positions (n = 319)

97% have difficulties filling IT positions – almost universal

59% salary expectations do not match qualifications – most common obstacle

47% applicants lack the required German language skills

Only 7% of senior AI/ML engineer candidates in our pool have German B2+ (see chapter 5)

31% receive practically no applications – the problem starts before selection

18% increasingly use external IT professionals to meet their needs

18% External capacity is an underused lever, given that 97% struggle to fill IT roles.

Source: Bitkom, "Der Arbeitsmarkt für IT-Fachkräfte", 2026 study · two representative telephone surveys by Bitkom Research among 853 and 602 companies with at least 3 employees (calendar weeks 18–25, 2026). Shortage figures refer to all companies (n = 602); the bars refer to companies with IT positions (n = 319).

CHAPTER 5 · JIMMY DATA

What real placements show

Public data shows demand; this chapter shows the supply side, based on real placements and the worldwide talent pool of Jimmy Technologies. Values are updated in each edition; definitions stay stable so editions remain comparable.

Time to shortlist and to start

median days from request · benchmark: Bitkom 2025



Screening funnel since 1.1.2025



32% of senior AI/ML engineer candidates pass the technical screening

AI/ML ENGINEER SNAPSHOT

55

technically vetted senior AI/ML engineers in the Jimmy talent pool, ready to start within 2 weeks

Hourly rates: market vs. nearshore/offshore



Market median: DACH IT freelancers, Data & Analytics (Freelancer-Kompass 2026)

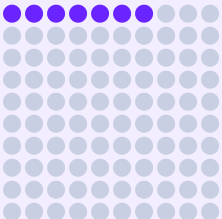
Most requested skills by Jimmy clients

LLMs · GenAI · RAG · LangGraph/LangChain

Retention and assignment length

6% early exits

15 months average assignment



7% of screened nearshore/offshore candidates have German at B2 level or higher — vs. 47% of companies citing lacking German skills (Bitkom 2026)

WHAT THIS MEANS · In our pool, requiring German B2+ would exclude ~93% of senior AI/ML engineer candidates. Companies that insist on German compete for a very small group — one reason 47% already report lacking German skills among applicants (Bitkom 2026).

CHAPTER 5 · SKILL-GAP-INDEX

Where AI/ML engineer candidates fail

Pass rates in Jimmy's technical screening per AI/ML skill area, set against demand in German job postings. The gap between "most requested" and "most failed" shows where the delivery gap is sharpest.

Based on 506 candidates, each assessed in all five areas; period from 1.1.2025.

SKILL AREA	PASS RATE · MOST COMMON GAP	DEMAND SIGNAL
LLM & RAG engineering Fine-tuning, RAG pipelines, evaluation	36% *"Treats them as a black box instead of reasoning about how they work and inferring their potential."*	LLMs #1 in NLP (6,281); RAG 3,988 (+92.6%)
MLOps & deployment Pipelines, monitoring, cloud deployment	43% *"Fails to watch what matters: token spend, drift, performance."*	–
System design & integration Scalable AI systems, integration into existing IT	51% *"Doesn't understand agent architecture or where it fails."*	–
Communication & soft skills Client communication, consulting mindset	59% *"Demonstrates weak communication and lacks product ownership."*	47% of companies cite lacking German skills (Bitkom 2026)
Agentic frameworks Applied LLMs, tools, instructions/prompt engineering, memory	60% *"Can build an agent demo, but not a reliable one: no guardrails, evaluation or error handling."*	LangChain #2 ML framework (1,847, +19.3%)

36% pass in LLM & RAG engineering – the lowest rate of all five areas, while LLMs lead the NLP skills requested in German job postings.

Method: Aggregated results from Jimmy's technical screening for the stated period. Rows ordered from lowest to highest pass rate. Demand signals: KI-Kompetenzmonitor (Index Research), Q3 2026; Bitkom 2026.

Methodology & sources

All values are rounded and taken from the publications listed below; the year in brackets is the survey or publication date.

Job postings measure demand, not hires. Large employers sometimes advertise the same position several times.

Scenarios and trend projections show what would happen if current trends continue; they are not forecasts.

Figures from different sources are not combined in calculations, because definitions and survey methods differ.

Bitkom (2026): Der Arbeitsmarkt für IT-Fachkräfte – Studie 2026

Bitkom (2025): Der Arbeitsmarkt für IT-Fachkräfte – Studie 2025 (vacancy duration 7.7 months)

Bitkom (2024): Mangel an IT-Fachkräften droht sich dramatisch zu verschärfen (2040 scenario)

interface / CEPS (2025): Solving Europe's AI talent equation

interface (2026): Talent in, Talent out

Index Research (2026): Starker Anstieg der Nachfrage nach KI-Experten and KI-Kompetenzmonitor

IW for BIHK (2026): IHK Arbeitsmarktradar Bayern 2026

freelancermap (2026): Freelancer-Kompass 2026

Jimmy LinkedIn Recruiter search (27 Oct 2026): job titles "Senior AI Engineer" and "Senior ML Engineer" as suggested by LinkedIn (which also match related and German titles); location Germany and Greater Munich Metropolitan Area; same settings in every edition.

Jimmy Technologies: internal data from placements and the talent pool; methodology see chapter 5.

About Jimmy Technologies

Jimmy Technologies is an AI & Data staffing company run by engineers, not recruiters. With one of the largest senior AI/ML teams in Central Europe, we help companies build AI and data teams with technically vetted specialists in 2 weeks – without wasting their teams' time on the wrong candidates.

We have extensive experience hiring and staffing engineers from the UK, across Europe, the Middle East and Asia.

AUTHOR

Martin Javier Stojka

CEO, Jimmy Technologies

CONTACT

hello@jimmytechnologies.com

linkedin.com/in/martinjavierstojka