

Curriculum

AI Engineering



Full-time: 32 weeks / 8 months

English

Remote

Become an AI Engineer – develop intelligent systems that change the world. Artificial intelligence is not the future – it is the present. As an AI Engineer, you teach machines how to think, you develop smart algorithms, train neural networks and create solutions that automate, optimize and inspire. From chatbots to voice assistants to self-learning systems – your work changes how we live and work. If you love technology and really want to make a difference, this is your way.

Experience a unique bootcamp that takes you from the basics of data science to the development, deployment and monitoring of data products. Learn everything you need from dedicated coaches to get started as a data scientist, AI or machine learning engineer. Each phase is designed to provide you with in-depth knowledge, practical applications and real projects.

Future jobs for you:

- › Data Scientist
- › Machine Learning Engineer
- › AI Engineer

Annual salary: 62.000 – 90.000 €

The curricula presented here are intended as an exemplary guide to course content. Adjustments to the content and schedule are possible from didactic and organizational perspectives reasons as well as to adapt to the state of the art and current requirements of the labor market expressly remain reserved, without thereby impairing the character of the course and the overall quality of its content.

Tech Stacks

Programming & Databases

- Python
- Visualization
- Unix / Command Line
- Git / GitHub
- Intermediate SQL

DS
& AI

Exploratory Data Analysis (EDA) & Statistics

- Data Cleaning & Preparation
- Data Analysis
- Data Visualization
- Feature Engineering

Machine Learning Algorithms

- Supervised Learning
- Unsupervised Learning

Model Tuning & Optimization

- Bias-Variance Tradeoff
- Regularization
- Cross-Validation
- Gradient Descent
- Cost Functions

Evaluation & Performance Metrics

- Confusion Matrix
- Regression & Classification Metrics
- Error Analysis

Deep Learning

- Artificial Neural Networks
- Convolutional Neural Networks
- Pre-trained Networks & Transfer Learning
- Natural Language Processing

Generative AI

- LLM
- Prompt Engineering
- RAG
- AI Agents

Hypothesis & A/B Testing

Time Series Analysis
Recommender Systems
Streamlit
AI Literacy

Practical Projects

- **Project 1:** Exploratory Data Analysis
- **Project 2:** Predictive Modeling
- Data Science & AI Capstone Project (4 weeks)

Software Engineering

- Code refactoring and OOP
- Unit & integration testing
- API building
- Containerization with Docker

AI &
MLE

Data Engineering

- Data modeling and ETL
- Data architecture & pipelines with dbt
- Workflow orchestration with Prefect
- Batch & real-time data processing

MLOPs: Machine Learning Engineering

- Basics of ML Modeling
- Experiment & model versioning with MLflow
- Model deployment
- Batch & real-time predictions

MLOPs: Model Monitoring and Maintenance

- CI/CD
- Data version control
- Service & model performance monitoring and tracking with Prometheus and Grafana
- Data & model drift monitoring with Evidently
- Training-to-Production pipelines

Building AI Systems

- LLM Foundations & Embeddings
- Prompt Engineering and Context Engineering
- RAG Pipelines & Fine Tuning
- Building Custom Agents & MCP

LLMOPs: Deploying AI Systems

- Serving LLMs with FastAPI
- Deploying Containerized LLMs
- Monitoring & Observability for LLM Services

Practical Projects

- 4 mini projects: Refactoring & API, Data Pipeline, Model deployment, MLOps
- 3 medium projects: RAG, Agent, LLM Deployment
- Machine Learning Capstone Project (4 weeks)

Collaborative Working & Social Learning

- Pair Coding
- Agile Workflow
- Self-organization Skills
- Group Work, Individual Exercises, Reversed Classroom
- Communication with Stakeholders & Presentations
- Career Coaching & Mentoring

Soft Skills

Click here
for final
projects

Communication Skills

Teamwork

Domain Knowledge

Problem Solving

Attention to Detail

Time Management

Adaptability

Open to Criticism

Patience

AI Tools

Github Copilot

Claude Code

Practical Project

Implementation of acquired knowledge in a real-life scenario.

Supported Job Search

We actively support job searches, offering regular networking events where participants connect with experienced tech professionals.

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Curriculum AI Engineering



Vollzeit: 32 Wochen / 8 Monate

Englisch Remote

Werde AI Engineer – entwickle intelligente Systeme, die die Welt verändern. Künstliche Intelligenz ist nicht Zukunft – sie ist Gegenwart. Als AI Engineer bringst du Maschinen das Denken bei: Du entwickelst smarte Algorithmen, trainierst neuronale Netze und schaffst Lösungen, die automatisieren, optimieren und begeistern. Von Chatbots über Sprachassistenten bis hin zu selbstlernenden Systemen – deine Arbeit verändert, wie wir leben und arbeiten. Wenn du Technik liebst und wirklich etwas bewegen willst, ist das dein Weg.

Erlebe ein einzigartiges Bootcamp, das dich von den Grundlagen der Data Science bis hin zur Entwicklung, Bereitstellung und Überwachung von Datenprodukten führt. Lerne von engagierten Coaches alles, was du brauchst, um als Data Scientist, AI- oder Machine Learning Engineer durchzustarten. Jede Phase ist darauf ausgelegt, dir fundiertes Wissen, praktische Anwendungen und reale Projekte zu vermitteln.

Zukunftsjobs für dich:

- > Data Scientist
- > Machine Learning Engineer
- > AI Engineer

Jahresgehalt: 62.000 – 90.000 €

The curricula presented here are intended as an exemplary guide to course content. Adjustments to the content and schedule are possible from didactic and organizational perspectives reasons as well as to adapt to the state of the art and current requirements of the labor market expressly remain reserved, without thereby impaling the character of the course and the overall quality of its content.

Tech Stacks

Programmierung & Datenbanken

- Python
- Visualisierung
- Unix / Command Line
- Git / GitHub
- SQL (Fortgeschrittenes Niveau)

DS
& AI

Explorative Datenanalyse (EDA) & Statistik

- Datenbereinigung & -vorbereitung
- Datenanalyse
- Datenvisualisierung
- Feature Engineering

Machine-Learning-Algorithmen

- Überwachtes Lernen
- Unüberwachtes Lernen

Modellabstimmung & -optimierung

- Bias-Varianz-Kompromiss
- Regularisierung
- Kreuzvalidierung
- Gradientenabstieg
- Kostenfunktionen

Evaluation & Leistungskennzahlen

- Konfusionsmatrix
- Regressions- & Klassifikationsmetriken
- Fehleranalyse

Deep Learning

- Künstliche neuronale Netze
- Konvolutionale neuronale Netze
- Vortrainierte Netzwerke & Transfer Learning
- Verarbeitung natürlicher Sprache

Generative KI

- LLM
- Prompt-Engineering
- RAG
- KI-Agenten

Hypothesentests & A/B-Tests

Zeitreihenanalyse
APIs & Web Scraping
Streamlit
AI Literacy

Portfolio-Projekte

- **Projekt 1:** Explorative Datenanalyse
- **Projekt 2:** Prädiktive Modellierung
Data Science & KI Capstone-Projekt (4 Wochen)

Software Engineering

- Code-Refactoring und OOP
- Unit- & Integrationstests
- API-Entwicklung
- Containerisierung mit Docker

AI &
MLE

Data Engineering

- Datenmodellierung und ETL
- Datenarchitektur & Pipelines mit dbt
- Workflow-Orchestrierung mit Prefect
- Batch- & Echtzeit-Datenverarbeitung

MLOPs: Machine-Learning-Modellierung

- Grundlagen des Machine Learning
- Experiment- & Modellversionierung mit MLflow
- Deployment-Strategien mit GCS
- Batch- & Echtzeit-Vorhersagen

MLOPs: Modellüberwachung & -wartung

- CI/CD
- Datenversionierung
- Service- & Modell-Performance-Monitoring mit Prometheus und Grafana
- Daten- & Modelldrift-Monitoring mit Evidently
- Training-to-Production-Pipelines

Building AI Systems

- LLM-Grundlagen & Embeddings
- Prompt Engineering und Context Engineering
- RAG-Pipelines & Fine-Tuning
- Erstellung von Custom Agents & MCP

LLMOps: Deployment von KI-Systemen

- Bereitstellung von LLMs mit FastAPI
- Deployment containerisierter LLMs
- Monitoring & Observability für LLM-Services

Praktische Projekte

- 4 Mini-Projekte: Refactoring & API, Datenpipeline
- Modelldeployment, MLOps
- 3 Mittelgroße Projekte: RAG, Agent, LLM-Deployment
- Machine Learning Capstone-Projekt (4 Wochen)

Kollaboratives Arbeiten & Soziales Lernen

- Pair Programming
- Agiler Workflow
- Selbstorganisationskompetenzen
- Gruppenarbeit, Einzelübungen, Flipped Classroom
- Kommunikation mit Stakeholdern & Präsentationen
- Karrierecoaching & Mentoring

Soft Skills

Hier
klicken
für finale
Projekte

Teamarbeit

Problemlösung

Kommunikationsfähigkeit

Zeitmanagement

Anpassungsfähigkeit

Detailgenau

Kritikfähig

Geduld

Eigenmotivation

AI Tools

GitHub Copilot

Claude Code

Praxisprojekt

Umsetzung des erworbenen Wissens in einem realen Szenario.

Unterstützte Jobsuche

Zusätzlich unterstützen wir aktiv bei der Jobsuche. Schon während des Lehrgangs können Teilnehmer:innen in regelmäßig stattfindenden Netzwerkveranstaltungen wertvolle Kontakte zu erfahrenen Fachkräften der Tech-Szene knüpfen.

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