Cloud Upskill
Learn, Upskill. Succeed!

GENERATIVE A I TRAINING

DURATION: 45 DAYS

3500+
Learners

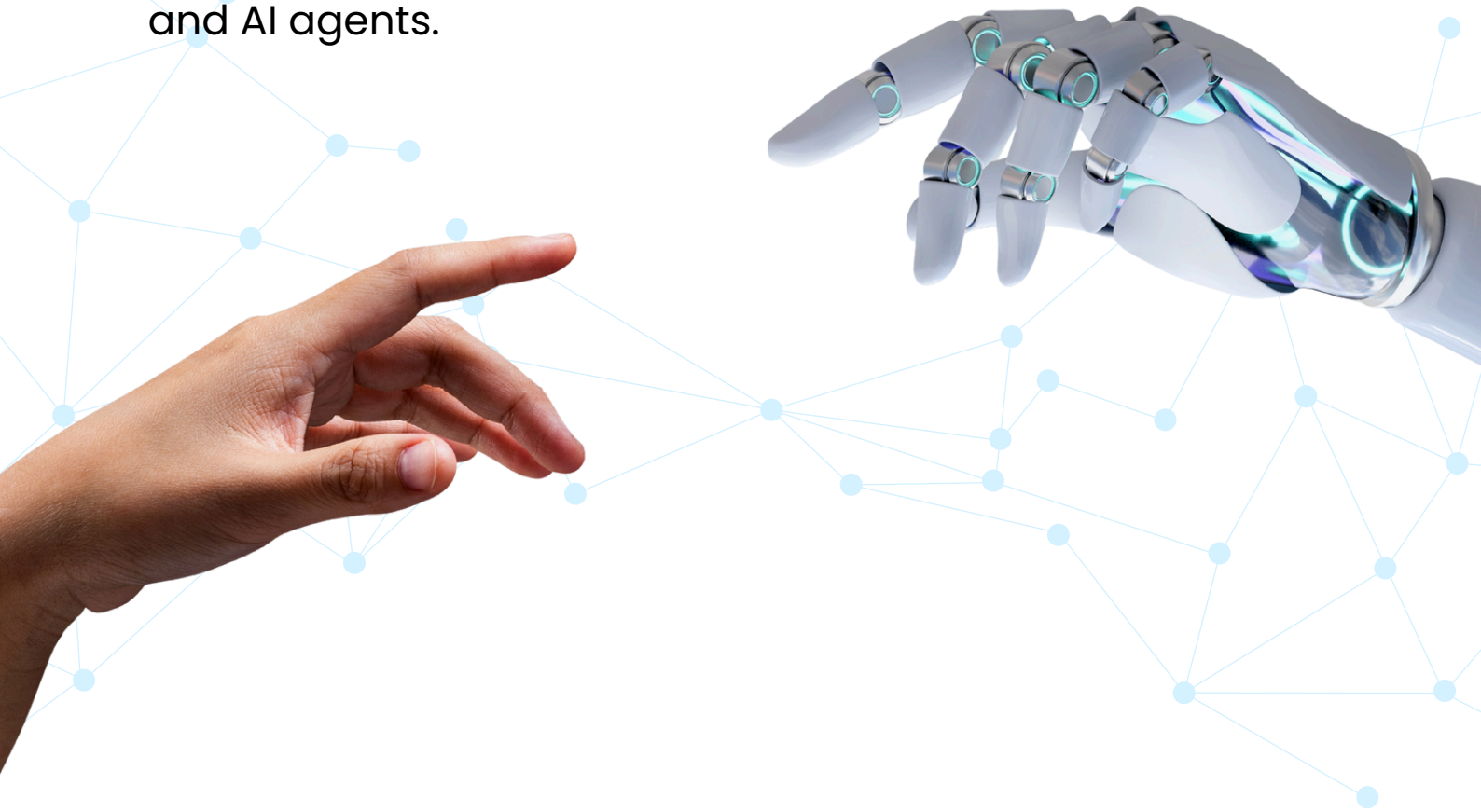
2000+
Placed

65%
Salary Hike

About The Program

Set out on a life-changing adventure with generative AI! We'll begin with an introductory course to cover the fundamentals, move on to Large Language Models to grasp text generation, deconstruct the intricacies of computer vision image creation, and conclude by implementing AI in practical applications.

This program will provide you with employable abilities in the fascinating topic of generative artificial intelligence, from fundamental ideas to creating advanced chatbots and AI agents.



No prior AI experience?

Don't worry — this program starts from the basics and gradually moves to advanced applications, ensuring **both beginners and professionals can benefit.**

- **Students & Fresh Graduates:** Build future-ready skills and stand out in competitive job markets.
- **IT Professionals & Developers:** Upgrade your technical expertise with AI integration and automation.
- **Data Analysts & Scientists:** Enhance analytics with AI-powered insights and predictions.
- **Business Leaders & Managers:** Drive innovation and decision-making with AI strategies.
- **Content Creators & Marketers:** Generate high-quality content faster with AI assistance.
- **Entrepreneurs & Startups:** Leverage AI to scale ideas, cut costs, and boost creativity.
- **Educators & Researchers:** Use AI to enhance teaching, research, and learning outcomes.

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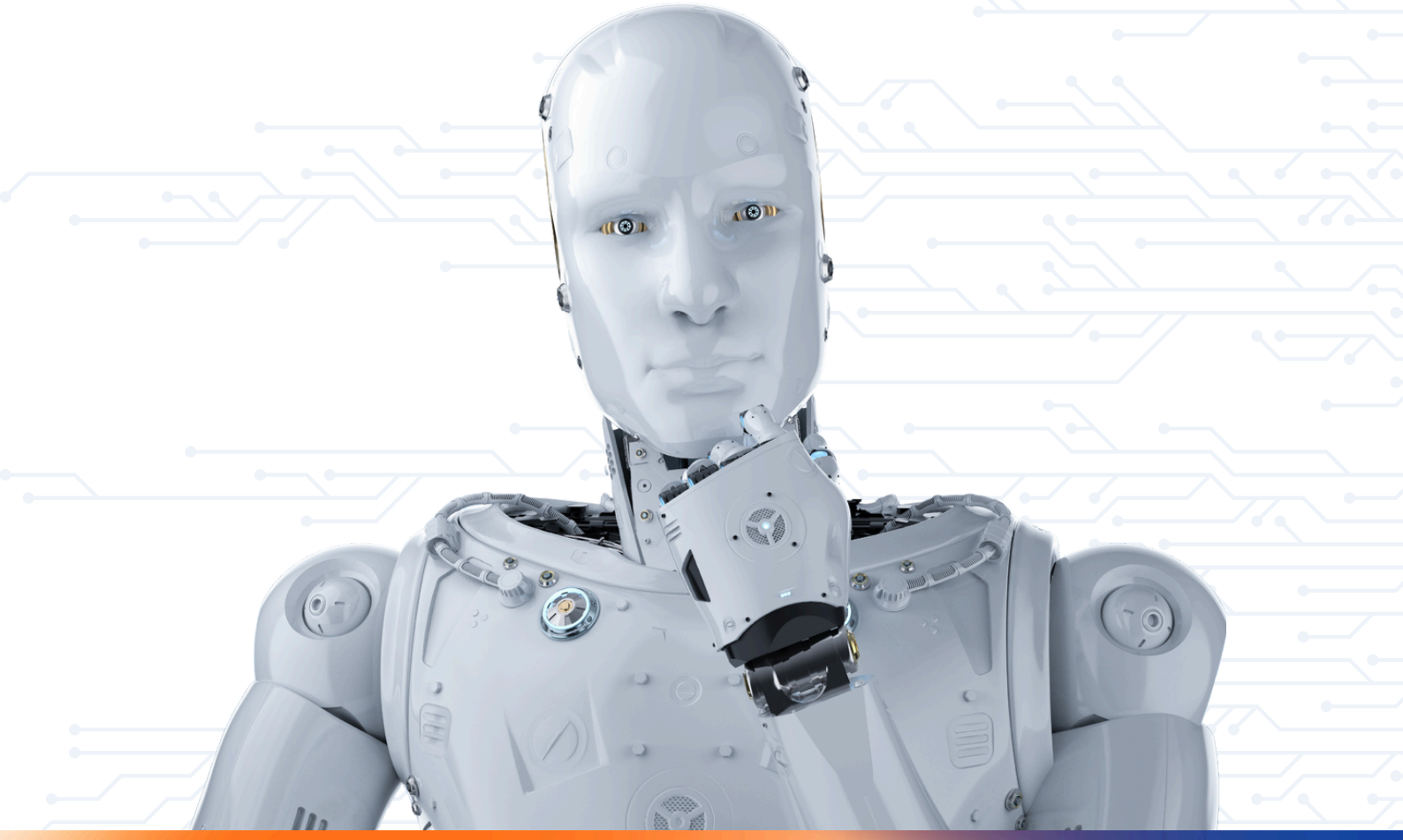
Why Take Generative AI?

It's a career accelerator and a business game-changer.

- **Stay Ahead of the Curve:** AI skills are rapidly becoming essential in almost every industry.
- **Unlock New Career Opportunities:** From AI developer to prompt engineer, demand is soaring.
- **Build Future Proof Skills:** Adapt to the evolving digital landscape with cutting-edge tools.
- **Accessible to All:** No coding expertise required to start creating with AI.
- **Enhance Creativity:** Create text, images, videos, music, and more with AI assistance.



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Why upskill with us?

- Structured, Industry vetted Curriculum
- Live Classes with Expert Trainers
- E-Learning & Recorded Classes
- 1:1 Mentorship & Mock Inteviews
- Placement Assistance
- Tab Learning Facility
- Assessment Test

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Course Curriculum

Introduction to AI Engineering

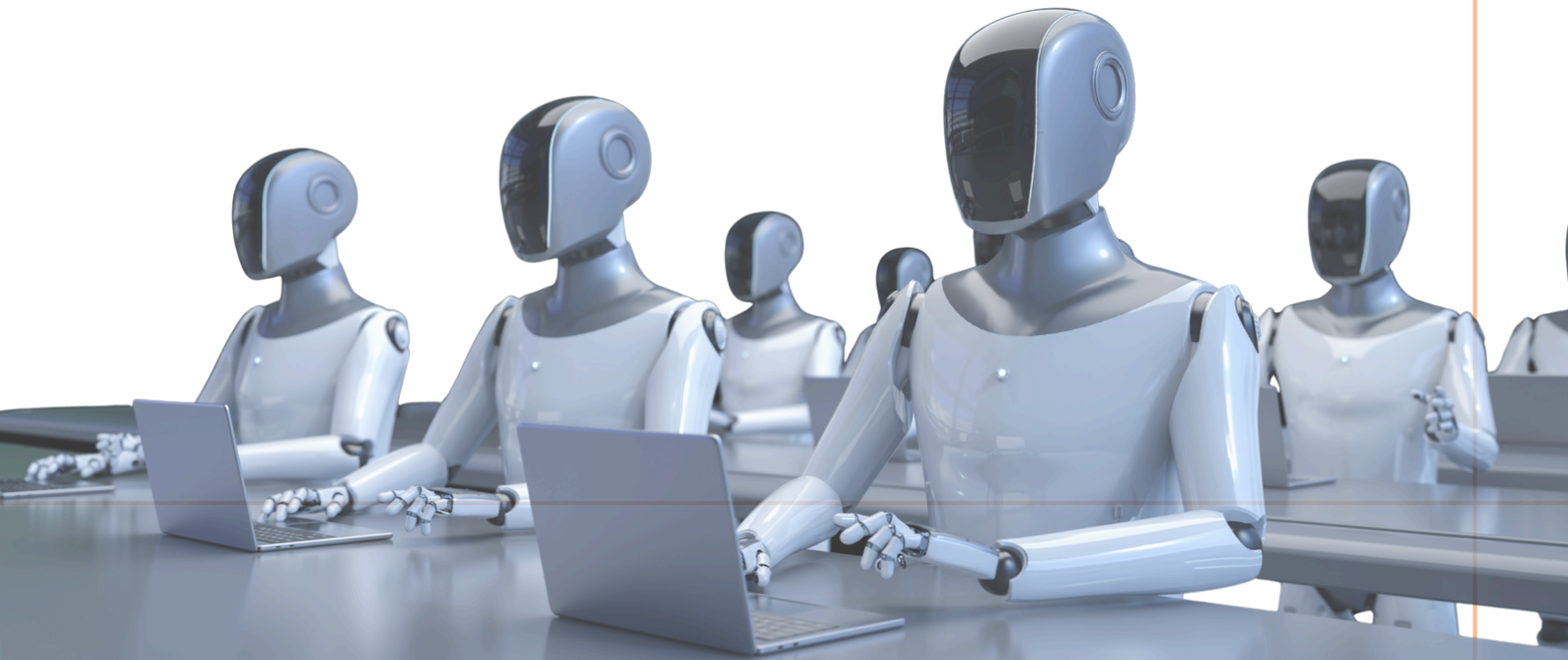
- Overview of AI Engineering
- Role of an AI Engineer
- AI vs. Machine Learning vs. Deep Learning

Python for AI & Machine Learning

- Python Basics (Refresher)
- NumPy for Numerical Computing
- Pandas for Data Manipulation
- Matplotlib & Seaborn for Data Visualization

Mathematics for AI & Machine Learning

- Linear Algebra (Vectors, Matrices, Operations)
- Probability & Statistics (Distributions, Bayes' Theorem)
- Calculus (Derivatives, Gradients, Optimization)



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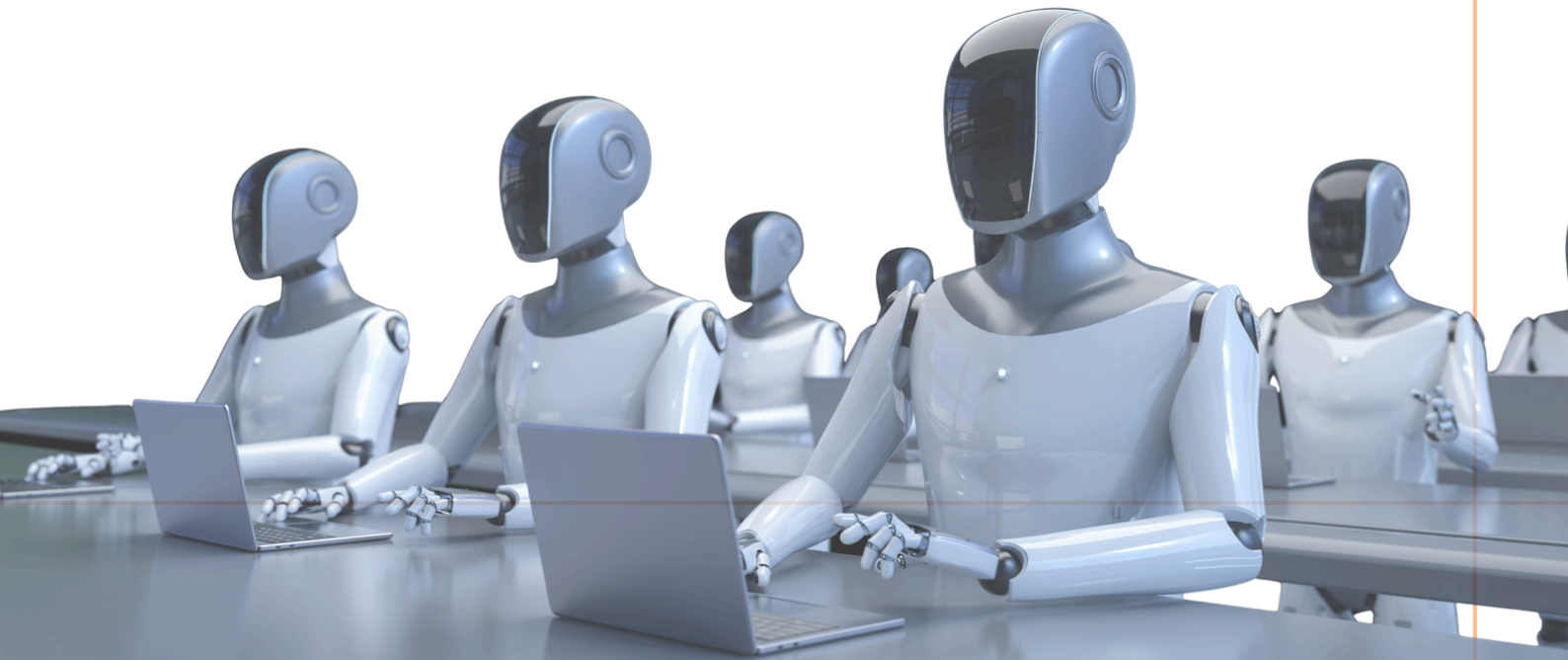
Course Curriculum

Machine Learning Fundamentals

- Supervised vs. Unsupervised Learning
- Regression (Linear, Polynomial, Logistic)
- Classification (Decision Trees, SVM, k-NN)
- Clustering (k-Means, Hierarchical, DBSCAN)
- Model Evaluation (Accuracy, Precision, Recall, F1, ROC-AUC)

Deep Learning & Neural Networks

- Introduction to Neural Networks
- Activation Functions (ReLU, Sigmoid, Tanh)
- Backpropagation & Gradient Descent
- TensorFlow & Keras for Deep Learning
- Convolutional Neural Networks (CNNs) for Computer Vision
- Recurrent Neural Networks (RNNs) for Sequence Data
- Transformers & Attention Mechanisms



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Course Curriculum

Natural Language Processing (NLP)

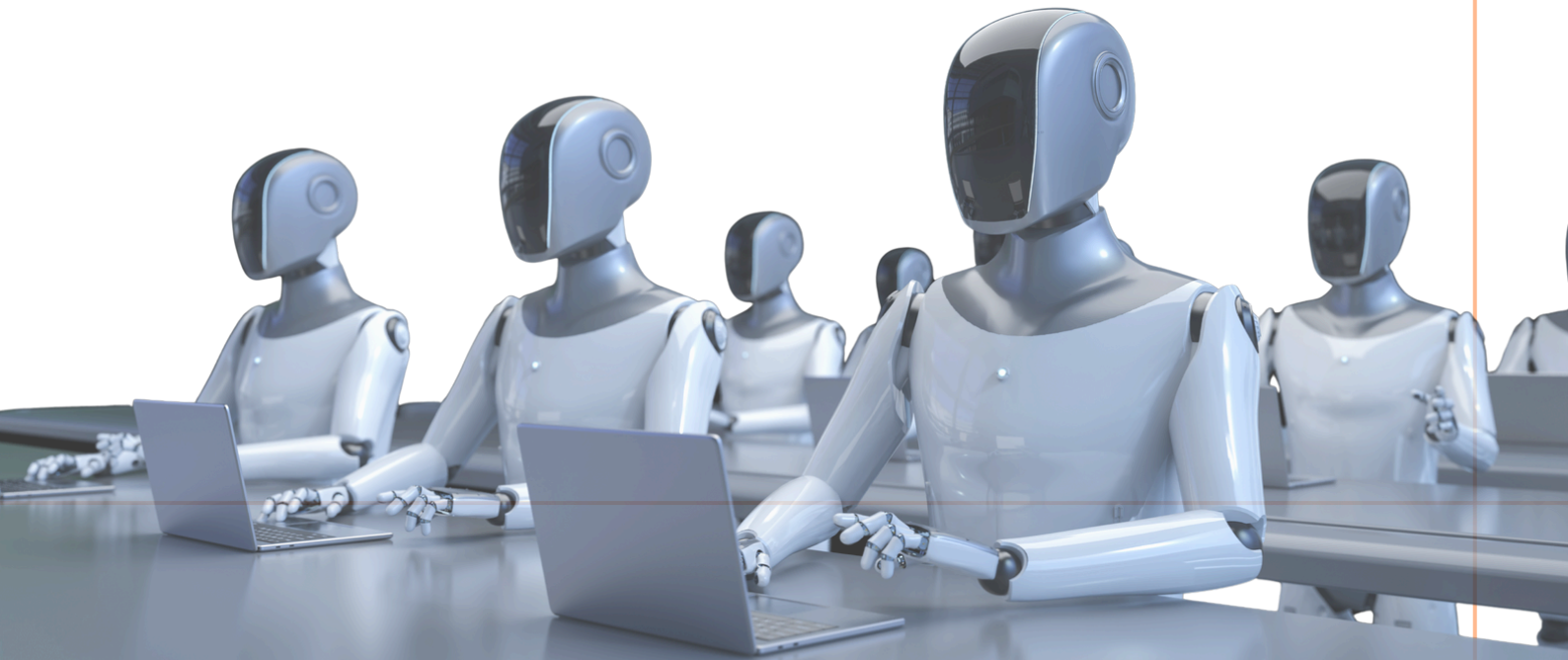
- Text Preprocessing (Tokenization, Stemming, Lemmatization)
- Word Embeddings (Word2Vec, GloVe, FastText)
- NLP Models (BERT, GPT, T5)
- Sentiment Analysis, Named Entity Recognition (NER)

AI Deployment & MLOps

- Model Deployment with Flask/FastAPI
- Docker for Containerization
- Cloud AI Services (AWS SageMaker, Google Vertex AI)
- CI/CD for Machine Learning
- Monitoring & Maintenance of AI Models

AI Ethics & Responsible AI

- Bias & Fairness in AI
- Explainable AI (XAI)



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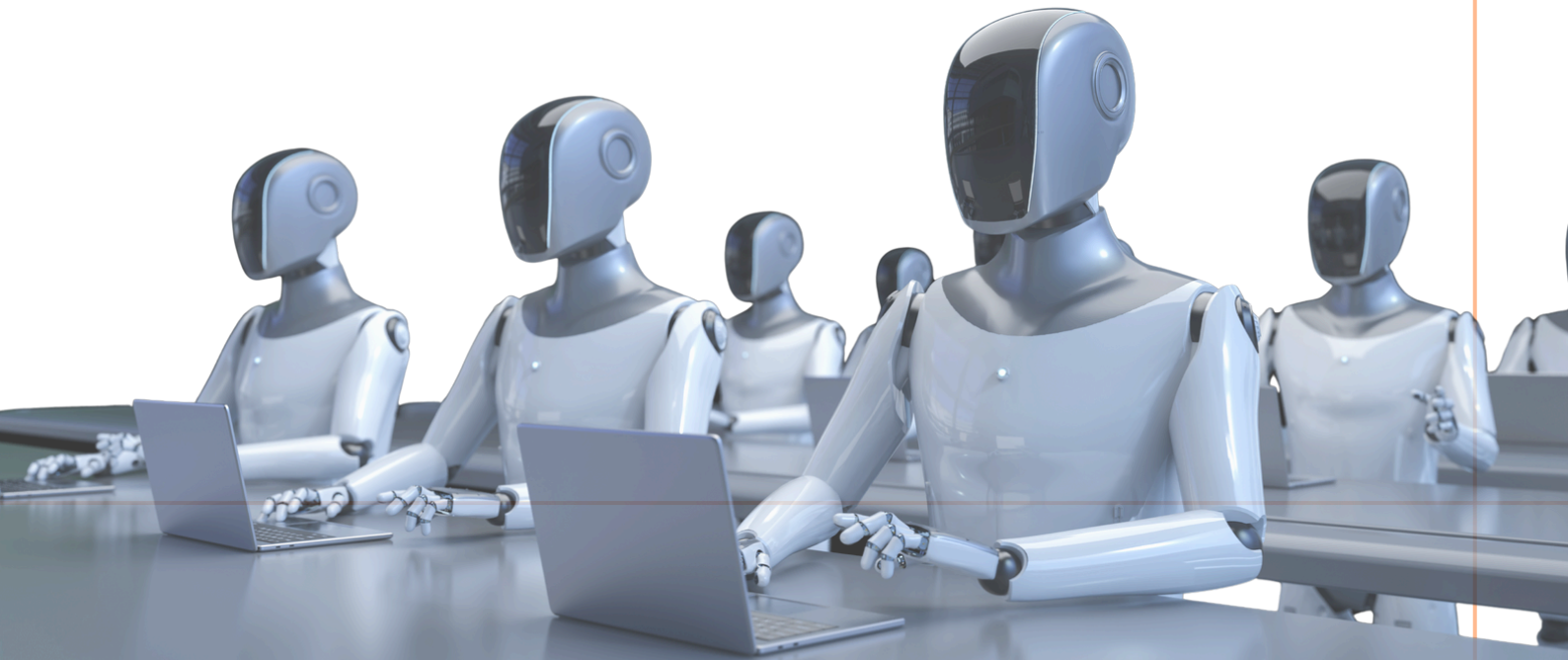
Course Curriculum

NLP Module: Topic Modelling

- What is topic modelling?
- When to use topic modelling?
- Latent Dirichlet Allocation (LDA)
- A note on the following lesson
- LDA in Python
- Latent Semantic Analysis (LSA)
- LSA in Python
- How many topics?

NLP Module: Building Your Own Text Classifier

- Building a custom text classifier
- Logistic regression
- Naive Bayes
- Linear support vector machine



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Course Curriculum

NLP Module: Categorizing Fake News (Case Study)

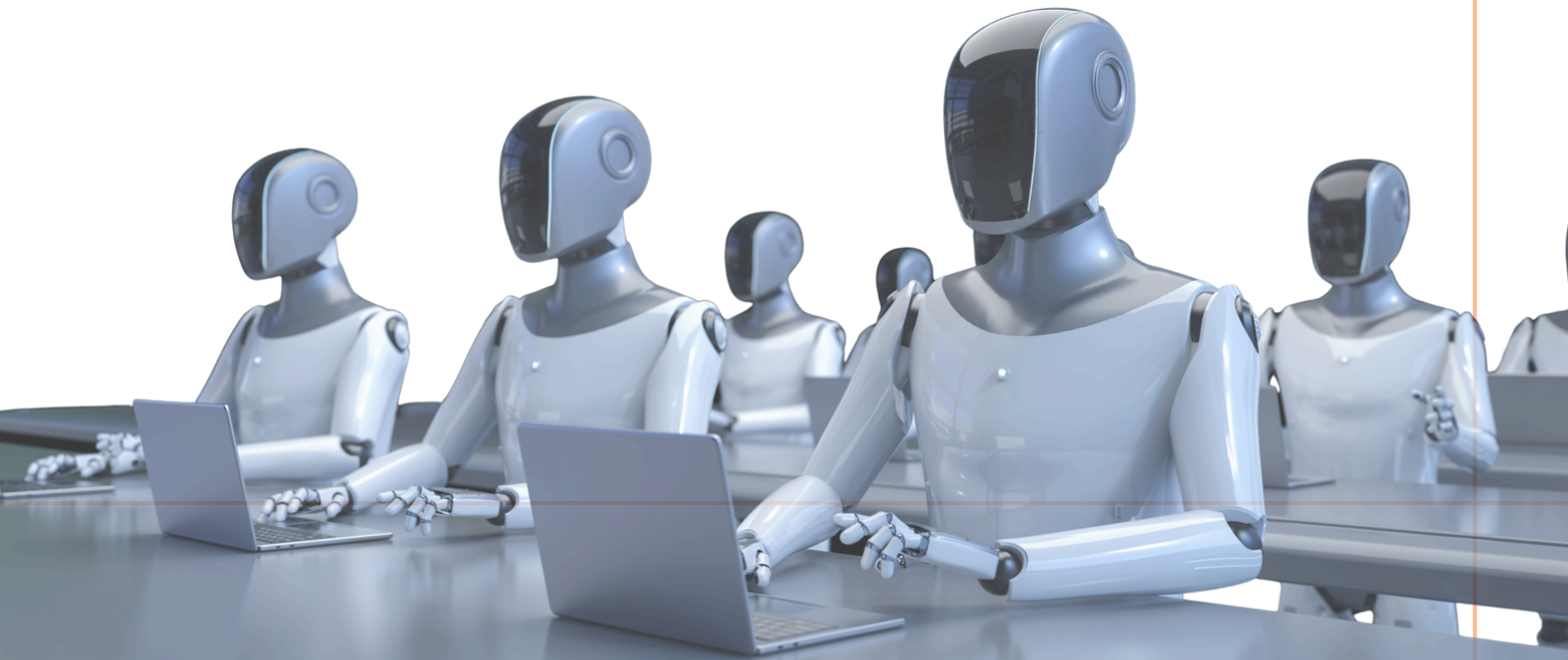
- A note on the case study
- Introducing the project

NLP Module: The Future of NLP

- What is deep learning?
- Deep learning for NLP
- Non-English NLP
- What's next for NLP?

LLMs Module: Introduction to Large Language Models

- Introduction to the course
- Course materials and notebooks
- What are LLMs?
- How large is an LLM?
- General purpose models
- Pre-training and fine tuning
- What can LLMs be used for?



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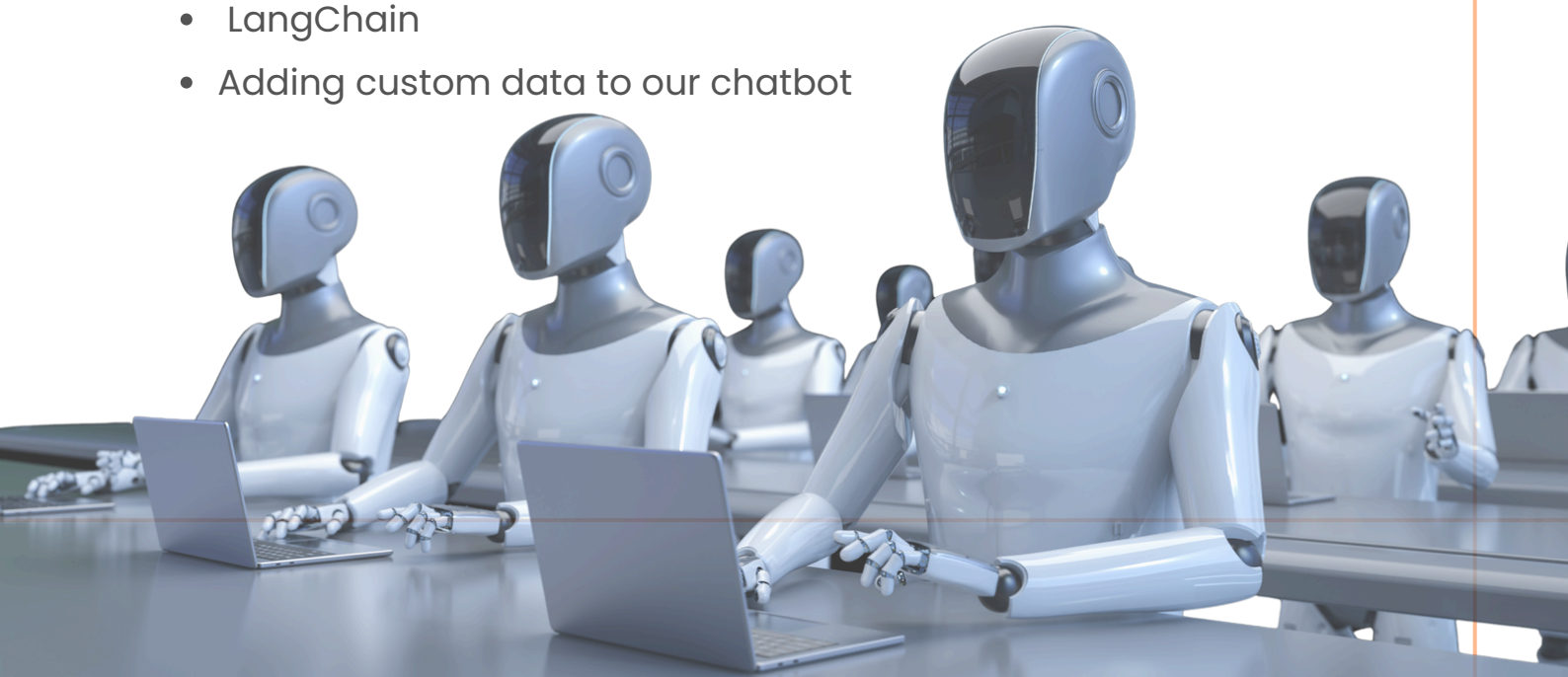
Course Curriculum

NLP Module: The Transformer Architecture

- Deep learning recap
- The problem with RNNs
- The solution: attention is all you need
- Input embeddings
- Multi-headed attention
- Feed-forward layer
- Masked multihead attention
- Predicting the final outputs

LLMs Module: Getting Started With GPT Models

- What does GPT mean?
- The development of ChatGPT
- OpenAI API
- Generating text
- Customizing GPT output
- Key word text summarization
- Coding a simple chatbot
- Introduction to LangChain in Python
- LangChain
- Adding custom data to our chatbot



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Course Curriculum

LLMs Module: Hugging Face Transformers

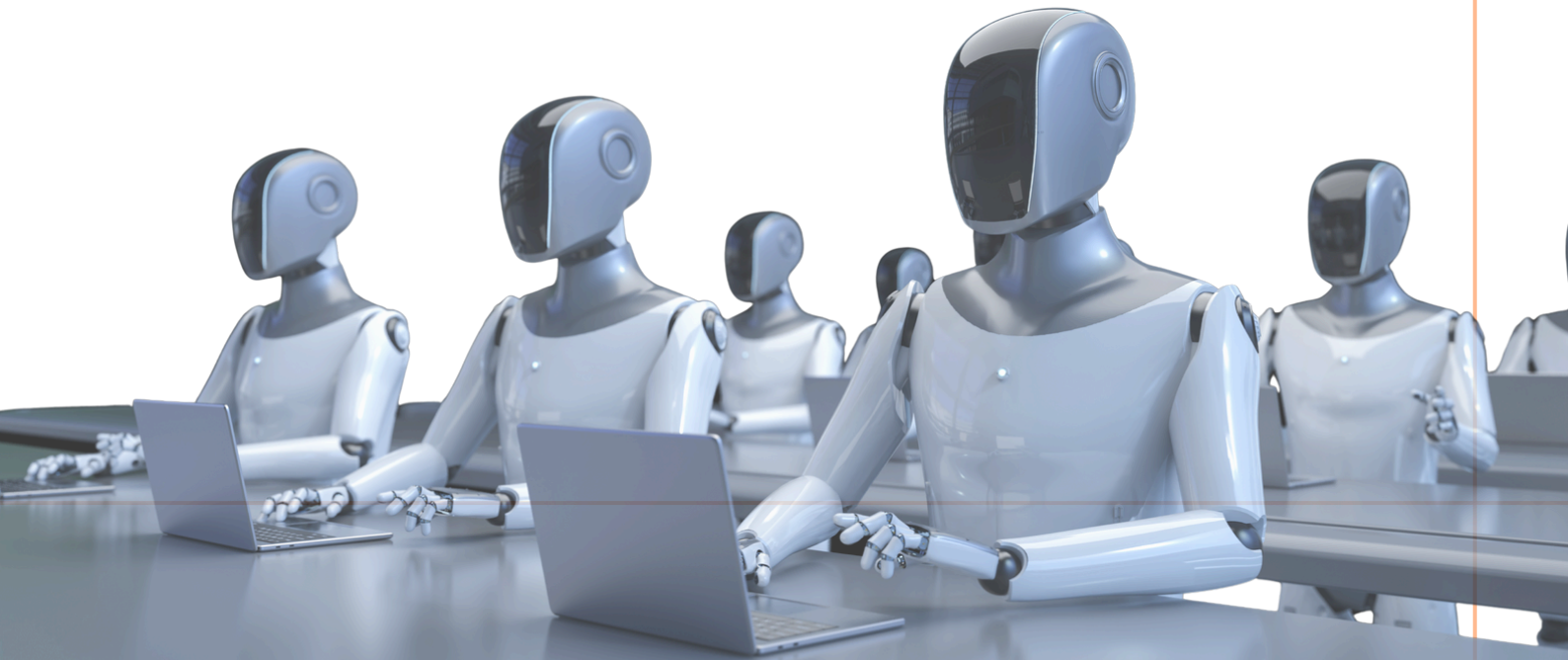
- Hugging Face package
- The transformer pipeline

LangChain Module: Introduction

- Introduction to the course
- Course materials and notebooks
- Business applications of LangChain
- What makes LangChain powerful?
- What does the course cover?

LangChain Module: Tokens, Models, and Prices

- Tokens
- Models and Prices



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Course Curriculum

LangChain Module: Setting Up the Environment

- Setting up a custom Anaconda environment for Jupyter integration
- Obtaining an OpenAI API key
- Setting the API key as an environment variable

LangChain Module: The OpenAI API

- First Steps
- System, user, and assistant roles
- Creating a sarcastic chatbot
- Temperature, max tokens, and streaming

LangChain Module: Model Inputs

- The LangChain framework
- ChatOpenAI
- System and human messages
- AI messages
- Prompt templates and prompt values
- Chat prompt templates and chat prompt values
- Few-shot chat message prompt templates

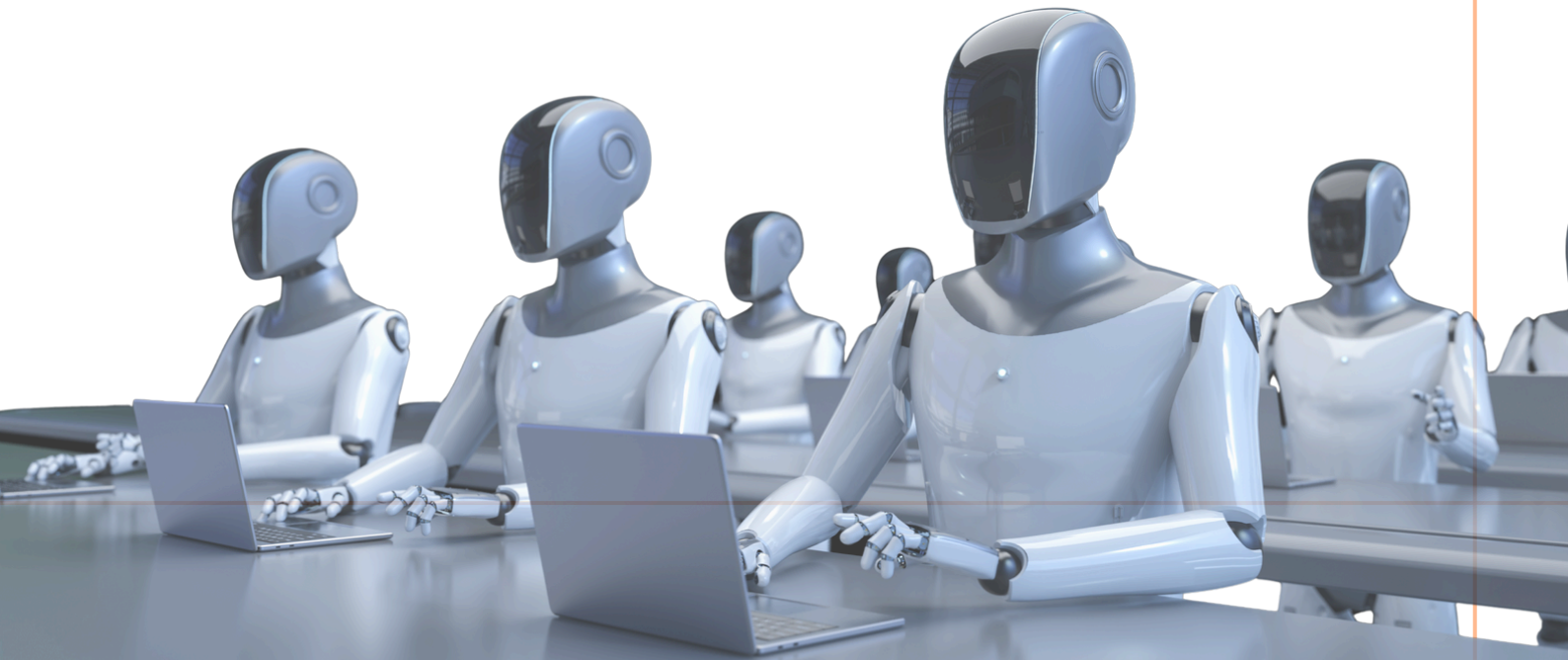
Course Curriculum

LangChain Module: Output Parsers

- String output parser
- Comma-separated list output parser
- Datetime output parser

LangChain Module: LangChain Expression Language (LCEL)

- Piping a prompt, model, and an output parser
- Batching
- Streaming
- The Runnable and RunnableSequence classes
- Piping chains and the RunnablePassthrough class
- Graphing Runnables
- RunnableParallel
- Piping a RunnableParallel with other Runnables
- RunnableLambda
- The @chain decorator



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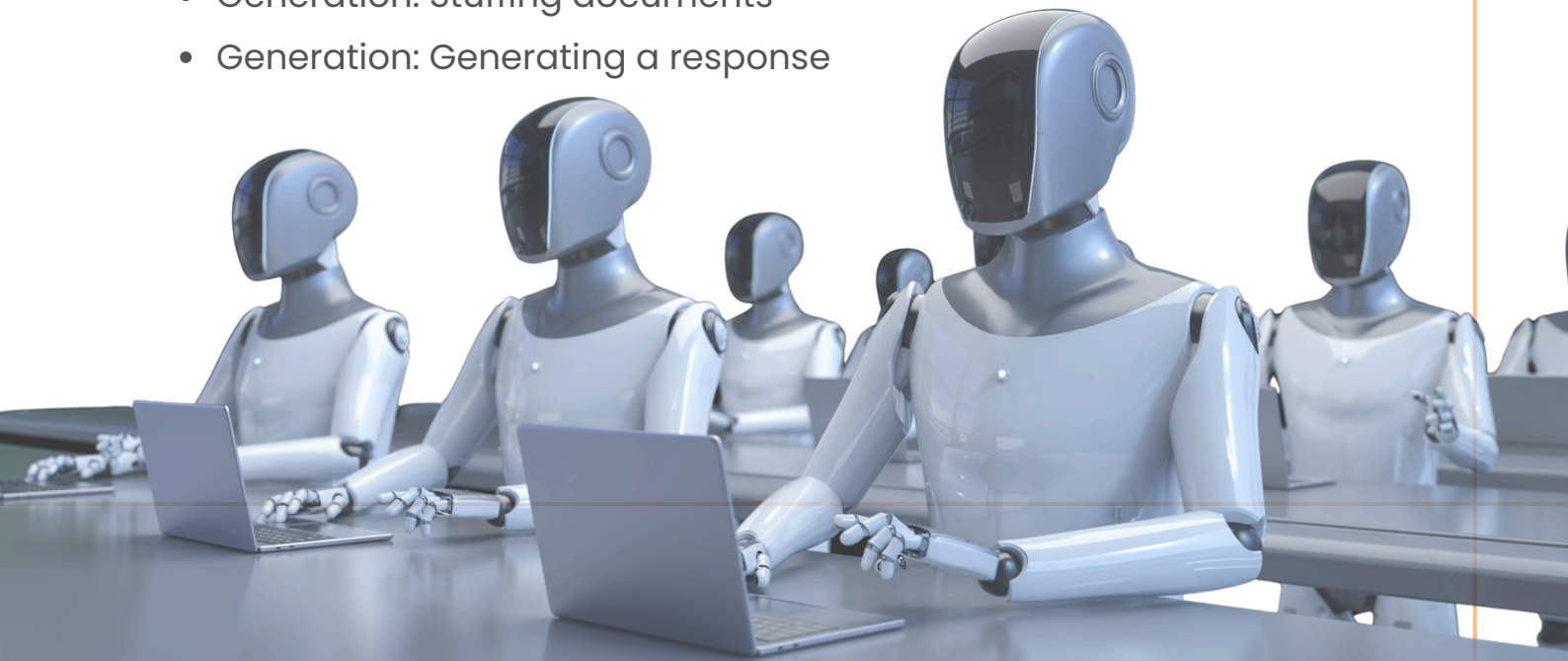
Course Curriculum

LangChain Module: Retrieval Augmented Generation (RAG)

- How to integrate custom data into an LLM
- Introduction to RAG
- Introduction to document loading and splitting
- Introduction to document embedding
- Introduction to document storing, retrieval, and generation
- Indexing: Document loading with PyPDFLoader
- Indexing: Document loading with Docx2txtLoader
- Indexing: Document splitting with character text splitter (Theory)
- Indexing: Document splitting with character text splitter (Code along)
- Indexing: Document splitting with Markdown header text splitter
- Indexing: Text embedding with OpenAI
- Indexing: Creating a Chroma vectorstore
- Indexing: Inspecting and managing documents in a vectorstore
- Retrieval: Similarity search
- Retrieval: Maximal Marginal Relevance (MMR) search
- Retrieval: Vectorstore-backed retriever
- Generation: Stuffing documents
- Generation: Generating a response



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Vector Databases Module: Introduction

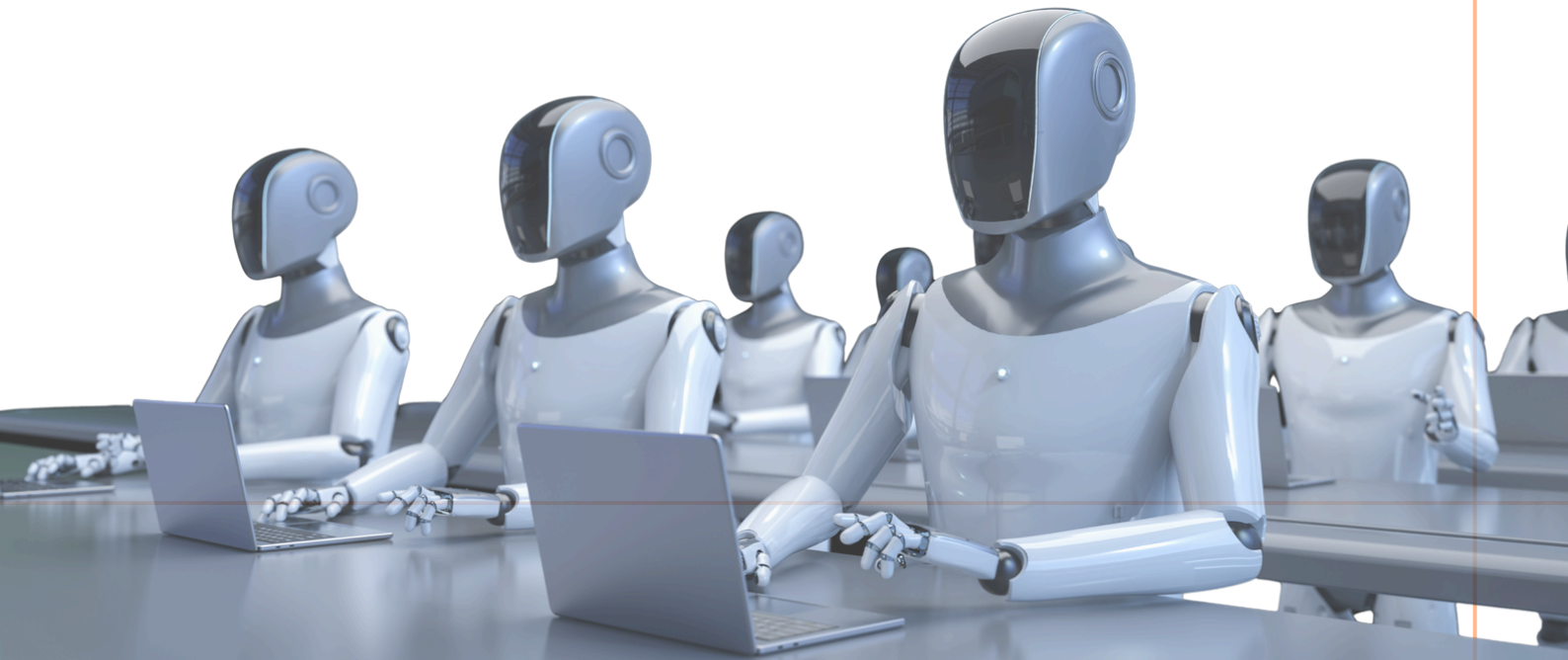
- Introduction to the course
- Course materials and notebooks
- Database comparison: SQL, NoSQL, and Vector
- Understanding vector databases

Vector Databases Module: Basics of Vector Space and High-Dimensional Data

- Introduction to vector space
- Distance metrics in vector space
- Vector embeddings

Vector Databases Module: Introduction to The Pinecone Vector Database

- Vector databases, comparison
- Pinecone registration, walkthrough and creating an Index
- Connecting to Pinecone using Python

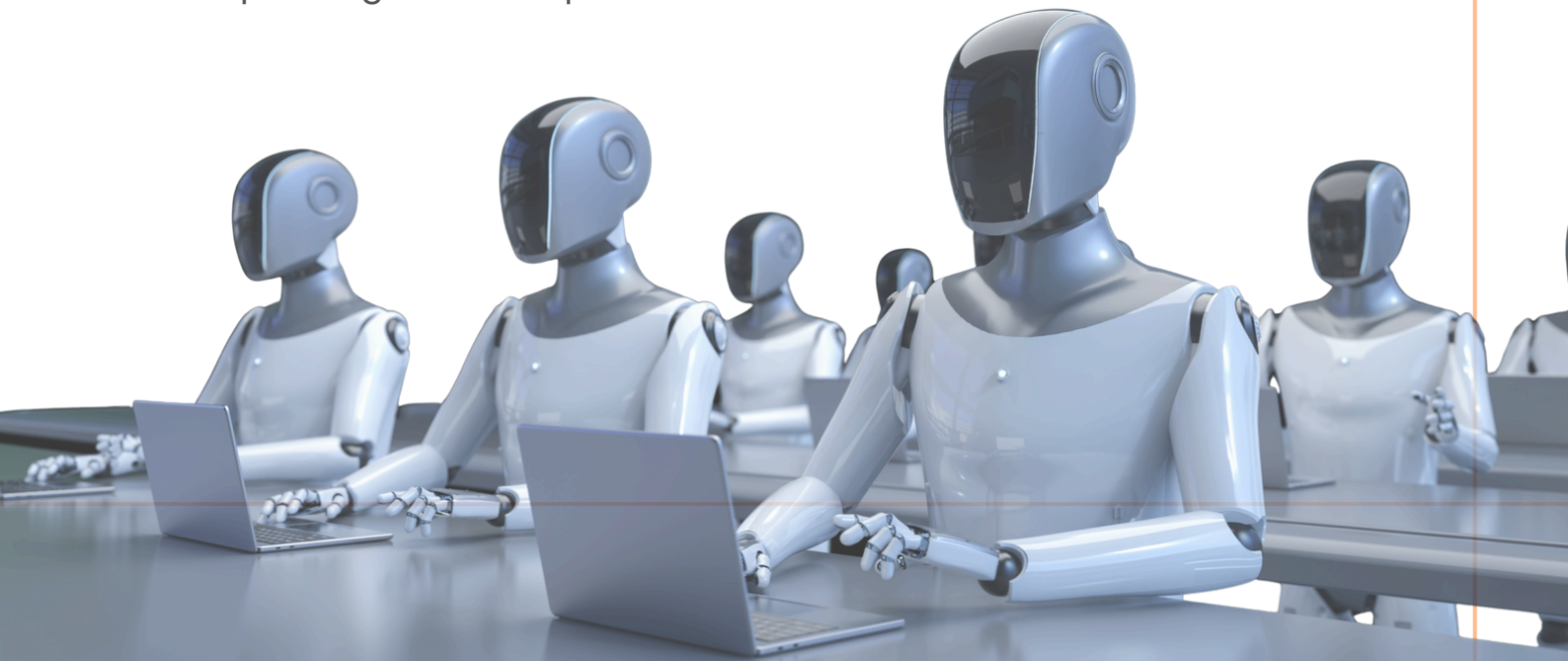


Course Curriculum

- Assignment
- Creating and deleting a Pinecone index using Python
- Upserting data to a Pinecone vector database

Vector Databases Module: Semantic Search with Pinecone (Case Study)

- Introduction to semantic search
- Introduction to the case study – smart search for data science courses
- Getting to know the data for the case study
- Data loading and preprocessing
- Pinecone Python APIs and connecting to the Pinecone server
- Embedding Algorithms
- Embedding the data and upserting the files to Pinecone
- Similarity search and querying the data
- How to update and change your vector database
- Data preprocessing and embedding for courses with section data
- Assignment 2
- Upserting the new updated files to Pinecone



Companies Hiring for GEN AI

Source: Glassdoor

Salary Range of GEN AI

Entry Level: Generative AI engineers with less than a year of experience can expect a salary ranging from ₹4 to ₹12 lakhs per year, according to Glassdoor.

Mid Level: Mid-level AI engineers, particularly those with 1-3 years of experience, may earn an average of ₹8 to ₹20 lakhs per year.

Senior Level: Senior AI professionals, including AI researchers and principal AI engineers, can earn anywhere from ₹25 lakhs to ₹50 lakhs per year

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About Us

Cloud Upskill is a career-focused training initiative designed to help students, working professionals, and tech enthusiasts gain in-demand cloud skills and transition into high-paying roles in the cloud ecosystem.

Our courses are designed to enhance your skills which helps to advance your career, which were taught by experts and include round the clock support.

Our exceptional career services assist students launch their careers in their ideal positions, and these courses help students become more employable.

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Hyderabad

Prestige Skytech, Financial District, Nanakramguda,
Financial District Telangana 500032

Contact: +91 9398162283

Vijayawada

Near Jyothi Convention Hall, Benz Circle,
Vijayawada, Andhra Pradesh 520010

Contact: +91 7780637278

https://cloudupskills.com/