

**Syllabus** 

# Generative Al Bootcamp

Our flagship online part-time bootcamp. Become a Generative AI enthusiast in 16 weeks.



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Job Demand

### Why Generative Al Bootcamp?

Generative AI Bootcamp unlocks your potential in the booming tech industry through a holistic approach to learning, with hands-on experience and collaboration for all levels. Here are some reasons to choose this career move:

#### 🖉 HIGH DEMAND

Generative AI skills are in high demand across various industries, including entertainment, healthcare, finance, and more.

#### PROBLEM SOLVING SKILLS

Studying data science can help you develop strong problemsolving skills, critical thinking abilities, and analytical skills. These skills are valuable across different industries and domains.

#### RANGE OF APPLICATIONS

Data science is applicable in various domains such as healthcare, finance, marketing, social media, and more. For example, data science is being used in healthcare to develop personalized treatments based on patient data

#### 🖉 LUCRATIVE CAREER

With the increasing adoption of generative AI technologies, professionals with expertise in this field are highly valued and can command lucrative salaries and benefits.

#### HANDS-ON EXPERIENCE

Generative AI offers hands-on experience in developing cutting-edge algorithms and models that can create new content, enhance existing data, and solve complex problems.



### **Career Overview**

Our robust Generative AI transforms you into a Data Science and Generative AI by covering front-end and back-end programming technologies, cultivating your adaptability and agility in the face of challenges. Gain hands-on experience through practical lessons, coding challenges, and real-world projects in a comprehensive curriculum that goes beyond just teaching code.



## Learning Path I



#### Machine Learning and Predictive Models with Python

**Projects:** 

Insurance Management System

### Deep Learning and Neural Networks

#### **Statistics, Probability and SQL**

**Projects:** 

• Analyzing Sales Data

#### Apache Spark: ML on Big Data

Projects:

Movie Recommendation System





## **Learning Path II**

#### Gen Al: GPT, ChatGPT, Transformers, and SAN Network





#### Developing with GPT using ChatGPT with OpenAI API

**Projects:** 

Building a Chatbot with ChatGPT

### LLM Intuition and Implementation

#### **Projects:**

Latent Layer Manipulation for
Image Generation





## **Learning Path III**



### Artificial Neural Networks and CNN

### Model Deployment: AWS, S3, and SageMaker

**Projects:** 

• Deploying a Machine Learning Model on AWS SageMaker



#### **CAPSTONE PROJECT**

Capstone Project 1: Generative Art Gallery Capstone Project 2: Al-Driven Storytelling Platform



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## Learning Path IV

#### **AI-Powered - Career Services Bootcamp**

**Career Services Marathon** 

All-round career support to excel in the tech industry



#### Al and Prompt Engineering Mini Bootcamp

Using Prompt Engineering to Maximize Your Learning

#### Interview Prep Mini Bootcamp

Preparing you to tackle Technical Interviews

#### Mock Interview Support After Bootcamp

**Boosting your confidence to be the winner in all situations** 



## Course: 123456789 Statistics, Probability and SQL

#### **Course Objectives**

This course provides a comprehensive introduction to statistics, probability theory, and SQL (Structured Query Language) for data analysis. Students will learn foundational concepts in statistics and probability, as well as practical skills in querying databases using SQL to perform data analysis tasks.

Unlock the power of Hadoop and Hive for scalable and flexible data warehousing solutions



#### **Skills Covered**

- Statistical analysis techniques
- Probability theory
- SQL querying and data manipulation
- Oata aggregation and summarization
- Oata visualization and interpretation





### **Course Project**

#### Analyzing Sales Data

The project involves using SQL to query a sales database and perform statistical analysis on sales data. Students will calculate key metrics such as average sales, total revenue, and sales distribution by region or product category. Additionally, they will use SQL to filter, group, and aggregate data to gain insights into sales trends and performance.

#### **Project Deliverables:**

- SQL queries for data analysis tasks
- Statistical summary report detailing key metrics and insights
- Data visualizations (e.g., charts, graphs) illustrating sales trends
- Presentation slides summarizing the analysis findings and recommendations

Statistical Chart

## Course: 123456789

### Machine Learning and Predictive models with Python

#### **Course Objectives**

This course covers the fundamentals of machine learning and predictive modeling using Python. Students will learn how to build and evaluate machine learning models for various tasks, including classification, regression, and clustering. The course will also cover techniques for feature engineering, model evaluation, and hyperparameter tuning.

Unlock the power of Python and SQL for efficient data processing and analysis



#### **Skills Covered**

- Python programming for machine learning
- O Data preprocessing and feature engineering
- Supervised learning algorithms (classification and regression)

Python

(@)

Machine Learning

- Unsupervised learning algorithms (clustering)
- Model evaluation and performance metrics
- Hyperparameter tuning and model optimization

Data Processing



## Course: 123456789 Apache Spark: ML on Big Data

#### **Course Objectives**

This course provides hands-on experience with Apache Spark's machine learning library (MLlib) for building predictive models on big data. Students will learn how to leverage Spark's distributed computing capabilities to perform scalable machine learning tasks, with a focus on building a movie recommendation system.

Spark your data processing skills and elevate your career with Apache Spark and Spark ETL



#### **Skills Covered**

- Apache Spark fundamentals
- Distributed computing concepts
- Machine learning with Spark MLlib
- Collaborative filtering algorithms
- Recommendation system design and implementation













### **Course Project**

#### Spark Movie Recommender

The project involves using SQL to query a sales database and perform statistical analysis on sales data. Students will calculate key metrics such as average sales, total revenue, and sales distribution by region or product category. Additionally, they will use SQL to filter, group, and aggregate data to gain insights into sales trends and performance.

#### **Project Deliverables:**

- Implemented a recommendation system using Apache Spark
- Model evaluation metrics (e.g., RMSE) for assessing recommendation quality
- Documentation detailing the system architecture, algorithms used, and implementation details
- Presentation slides summarizing the project, including key findings and insights













## Course: 1 2 3 4 5 6 7 8 9 Deep Learning and Neural Networks

#### **Course Objectives**

This course provides an introduction to deep learning and neural networks. Students will learn the fundamental concepts of deep learning, including neural network architectures, optimization algorithms, and training techniques. The course will cover practical applications of deep learning in various domains, such as computer vision, natural language processing, and speech recognition.

Empower your data engineering skills with the industry-leading features of AWS



#### **Skills Covered**

- Understanding of neural network architectures (e.g., feedforward, convolutional, recurrent)
- Training and optimization techniques (e.g., backpropagation, gradient descent)
- Hands-on experience with deep learning frameworks (e.g., TensorFlow, PyTorch)

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Neural Network

Application of deep learning in computer vision, NLP, and speech recognition

Tensorflow

Model evaluation and performance tuning

Pytorch

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## Course: 1 2 3 4 5 6 7 8 9 Gen Al : GPT, ChatGPT, Transformers, and SAN Network

#### **Course Objectives**

This course explores generative AI models such as GPT (Generative Pre-trained Transformer), ChatGPT, and Transformers. Students will learn about the underlying architecture of these models and their applications in natural language processing, text generation, and dialogue systems. The course will also cover the fundamentals of self-attention networks (SAN) and their role in transformer-based architectures.

Master data engineering with Azure and unleash the power of your data



#### **Skills Covered**

- Understanding of generative AI models (e.g., GPT, ChatGPT)
- O Applications of generative AI in NLP and text generation

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ChatGPT

- Implementation of transformer-based architectures
- Hands-on experience with OpenAI API and other model deployment platforms
- Introduction to self-attention networks (SAN) and their importance in transformer models

OpenAl



### Course: 1 2 3 4 5 6 7 8

### Developing with GPT using ChatGPT with OpenAl API

#### **Course Objectives**

This course focuses on developing conversational AI applications using the OpenAI API and ChatGPT. Students will learn how to integrate ChatGPT into a chatbot application, design conversational flows, and implement natural language understanding capabilities. The course will cover techniques for building engaging and interactive chatbots that can effectively communicate with users.

Transform your big data challenges into opportunities with Databricks for Generative Aling



#### **Skills Covered**

- Integration of AI APIs into applications
- Natural language processing (NLP) techniques
- Onversational design principles
- Dialog management and state tracking
- Error handling and fallback strategies in chatbots









### **Course Project**

#### Al Chatbot Development with ChatGPT

The project involves building a chatbot application using the OpenAI API and ChatGPT. Students will develop conversational flows and implement natural language understanding capabilities to create a chatbot that can engage in meaningful conversations with users. The chatbot will be designed to handle various user queries and provide appropriate responses based on the context of the conversation.

#### **Project Deliverables:**

- Integrated chatbot application using the OpenAI API
- Design documentation outlining conversational flows and dialog management strategies
- Implementation of natural language processing techniques for user input processing
- Demo video showcasing the functionality of the chatbot in engaging conversations







### Course: 1 2 3 4 5 6 7 8

## LLM Intuition and Implementation

#### **Course Objectives**

This course delves into the intuition and implementation of latent layer manipulation (LLM) techniques for image generation using generative adversarial networks (GANs). Students will gain a deep understanding of latent space representations in GANs and learn how to manipulate these representations to control the generation of images.

Master cloud-based data warehousing with Snowflake



#### **Skills Covered**

- O Understanding of GAN architecture and latent space
- Implementation of GAN models using deep learning frameworks (e.g., TensorFlow, PyTorch)
- C Techniques for latent space interpolation and manipulation
- ✓ Visualization and interpretation of latent space representations
- Solution Evaluation of image generation quality and diversity



### **Course Project**

#### ⊘ Latent Layer Manipulation for Image Generation

The project involves implementing latent layer manipulation techniques to control the generation of images using a generative adversarial network (GAN). Students will explore methods for interpolating and manipulating latent space vectors to generate diverse and high-quality images. They will experiment with different manipulation techniques to understand their effects on the generated images.

#### **Project Deliverables:**

- Implemented GAN model for image generation
- Demonstration of latent space manipulation techniques
- Visualizations of generated images and corresponding latent space representations
- Evaluation metrics for assessing image quality and diversity



## Artificial Neural Networks and CNN

Course: 1 2 3 4 5 6 7 8

#### **Course Objectives**

This course provides a comprehensive understanding of artificial neural networks (ANNs) and convolutional neural networks (CNNs). Students will learn the theoretical foundations of ANNs and CNNs, as well as practical skills for building and training neural network models. The course will cover various applications of CNNs in computer vision, including image classification, object detection, and image segmentation.

Design efficient databases for seamless data management



#### **Skills Covered**

- O Understanding of artificial neural network architectures
- O Training and optimization techniques for neural networks
- Convolutional neural network (CNN) architecture and operations
- Image processing and computer vision techniques
- Implementation of CNN models using deep learning frameworks (e.g., TensorFlow, PyTorch)
- Model evaluation and performance tuning for image classification tasks



Deep Learning

Artificial Neural Network







### Course: 1 2 3 4 5 6 7 8 9

### Model Deployment: AWS, S3, and SageMaker

#### **Course Objectives**

This course focuses on deploying machine learning models on the AWS cloud platform using services such as Amazon SageMaker and Amazon S3. Students will learn how to package and deploy trained models to SageMaker, set up endpoints for real-time predictions, and manage model versions. The course will cover best practices for model deployment, scalability, and cost optimization on AWS.

Automate your data workflows with confidence using Apache Airflow



#### **Skills Covered**

- O Deployment of machine learning models on cloud platforms
- Utilization of AWS services for model deployment (SageMaker, S3)
- Model packaging and versioning
- Solution Configuration for real-time predictions
- Monitoring and management of deployed models
- Cost optimization strategies for model deployment on AWS







### **Course Project**

#### Machine Learning Model Deployment on AWS SageMaker

The project involves deploying a trained machine learning model to AWS SageMaker, a cloud-based machine learning platform. Students will use Amazon S3 for storing model artifacts and data, and deploy the model as a scalable and cost-effective endpoint for real-time predictions. They will configure the endpoint, test its functionality, and monitor its performance on SageMaker.

#### **Project Deliverables:**

- Deployed machine learning model on AWS SageMaker
- Documentation detailing the deployment process, including model packaging and endpoint configuration
- Testing results and performance metrics for the deployed model
- Cost analysis and optimization recommendations for model deployment on AWS





### Capstone Project: 1 Generative Art Gallery

Create a web-based platform that showcases a gallery of generative artworks created using various generative AI techniques such as GANs, VAEs, and neural style transfer. Users can explore the gallery, interact with the artworks, and even commission custom pieces. The platform should also include features for artists to upload their own generative artworks and for visitors to purchase prints or digital copies.

Final Project for your bootcamp completion and portfolio building



#### **Skills Covered:**

- Generative AI techniques for art generation
- Web development skills for building a user-friendly platform
- O Database management for storing and retrieving artwork information
- User authentication and authorization for artist accounts and customer purchases

जि HTML 🗃 CSS 📙 JavaScript 🐼 React 🔤 Node.js

Payment integration for facilitating artwork sales



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### Capstone Project: 2 Al-Driven Storytelling Platform

Develop a storytelling platform that leverages generative AI models to dynamically generate stories based on user inputs and preferences. Users can provide prompts or themes, and the platform will generate unique stories tailored to their preferences. The platform should include features for users to interact with the generated stories, provide feedback, and even collaborate with other users to co-create stories.

Final Project for your bootcamp completion and portfolio building



#### **Skills Covered:**

- Natural language processing for text generation
- Frontend and backend development for building an interactive platform
- User input processing and sentiment analysis for personalized story generation

🕤 HTML 🗧 CSS 📙 JavaScript 🐼 React 🔤 Node.js

- Collaborative features for user interaction and co-creation
- Obtain the storage and retrieval for storing generated stories and user feedback



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### Course: Career Services Marathon

Across four lessons: lesson 1 introduces Career Services at Takeo and job search strategies. Lesson 2 covers personal branding, including resumes, GitHub, and LinkedIn. Lesson 3 guides using the Career Services app for job hunting. Lesson 4 concludes with holistic insights on navigating Takeo's career services effectively.

#### Lesson 1:

### Introduction to Career Services and Orientation

Introduction to Career Services at Takeo, Career Path & Roadmap, Job Search Strategy, and Career Services Feature at Takeo. All-round career support to excel in the tech industry

#### Deliverable:

a) Individual career plan

#### Lesson 2:

#### **Personal Branding for Coders**

Resume building, cover letter, GitHub, job searching strategies, LinkedIn profile optimization, personal branding, and live behavioral workshops

#### **Deliverable:**

Uploading the resume and LinkedIn profile



### Course: Career Services Marathon

#### Lesson 3:

#### Learn to use CS application to track job applications

Introduction to Career Services Application, top features in the application, learn to use the application to get hired. Tracking your performance in the job search.

#### **Deliverable:**

a) Career services HuntR platform

#### Lesson 4:

#### **Navigating Career Services to get hired fast**

Learning how all of the career services tie together, and, learn the tips, tricks, and, about your responsibilities to get hired.

#### **Deliverable:**

a) Submission of dates of the next 2 CS coaching and 2 mock interviews

## Course: 1234 Al and Prompt Engineering Mini Bootcamp

Over two lessons, participants delve into AI and Prompting Engineering. Lesson 1 focuses on grasping ChatGPT's coding aid potential and enhancing skills effectively. Lesson 2 hones in on using AI for software engineering career advancement, promoting engineering in practice, interview readiness, Q&A, and resource sharing. Both course has deliverables to be completed in time for effective learning.

#### Lesson 1:

#### Understanding AI and Prompt Engineering: Harnessing AI for Skill Enhancement

Participants will be introduced to ChatGPT, exploring its functionalities and coding assistance capabilities. Through hands-on practice and learning techniques, attendees will learn how to utilize ChatGPT for accelerated coding skill acquisition efficiently.

#### **Deliverables:**

a) Skill enhancement plan for the next 10 days

b) Breakdown of the project and project works





#### Lesson 2:

### Securing the Prize:Leveraging AI and Prompting Engineering to Land a Software Engineer Position

The software engineering and data job market, leveraging AI for career growth, applying promoting engineering in practice, interview preparation and strategies, and conclude with a Q&A session and sharing additional resources for continued learning.

#### **Deliverables:**

a) Top-notch cover letter

b) Technical Interview prep questionnaire collection that syncs with your resume.



## Course: Interview Prep Mini

Over four lessons: Lesson 1 covers interview types, etiquette, and standing out. Lesson 2 enhances soft skills and behavioral answers with mock interviews. Lesson 3 readies for technical questions, including system design and coding challenges. Lesson 4 delves into data structures, algorithms, and optimizing code.

#### Lesson 1

#### Types of Interviews, Interview Etiquette and Best Practices

Bootcamp

This session covers types of interviews, interview etiquette, role-playing exercises, and tips for making a positive impression and standing out. Preparing you to tackle Technical Interviews

#### **Deliverable:**

a) Introduction and Elevator pitch

#### Lesson 2

#### **Soft Skills & Behavioral Questions**

This session focuses on developing soft skills, particularly effective communication, teamwork, and leadership. It includes mock interviews and strategies for answering behavioral interview questions.

#### **Deliverable:**

a) 25 soft skills and behavioral questionnaires.

### Duration 4 4 Lessons Hours



### Course: Interview Prep Mini Bootcamp

#### Lesson 3

#### **Tacking Technical Questions and Coding Challenges**

This session focuses on interview preparation for advanced technical topics in full-stack development, including system design, databases, web technologies and problem-solving abilities.

#### **Deliverable:**

a) 50 core technical questionnaires.

#### Lesson 4:

#### **Data Structure and Algorithm Questions**

This session covers common data structures and algorithms, practicing problem-solving with them, and optimizing code efficiently.

#### **Deliverable:**

a) Plan of action to practice interview questions daily.

## Course: 1 2 3 4 Mock Interview and Support After Bootcamp

Takeo Bootcamp provides comprehensive training programs and offers continued support to its graduates through mock interviews during the Bootcamp and various post-graduation support events. These initiatives aim to boost graduates' skills, confidence, and employability, ensuring they have a competitive edge in the job market.

Boosting your confidence to be the winner in all situations

#### **Mock Interviews and Career Coaching**

Takeo understands that mock interviews play a vital role in preparing Bootcamp graduates for real-world job interviews. To facilitate this process, Takeo provides one mock interview per week until all participants have secured employment. Some of the significant initiatives are:

- Simulating Real-world Scenarios
- Identifying Areas of Improvement
- Adapting to Different Industries

#### **Support after Bootcamp**

Takeo believes in providing ongoing support to its graduates even after the completion of the Bootcamp. Various support events and initiatives are organized to assist graduates in their job search and career development. Let's explore some of these events:

- Networking Events
- Career Workshops and Webinars
- Alumni Support Groups

#### **Deliverables:**

- 1. First mock interviews with expert feedback
- 2. Second mock interviews with expert feedback
- 3. First career coaching with expert feedback
- 4. Second career coaching with expert feedback







Median Salary

New

Bootcamp



## **Program Schedule and** Delivery

At Takeo, the Generative AI Bootcamp offers a unique learning experience with a strong sense of community. Part-time students apply their skills through collaborative, handson experiences like study groups, pair programming, code reviews, challenges, and group projects. Students receive unwavering support from their cohort throughout the program.

Takeo's online learning platform, Canvas and personalized assistance provide a customized learning experience for all students. The approach to studying is crucial to success and Takeo understands this.

Part lime	
Duration	16 weeks*
Time Commitment	10 Hours per week
Technical Workshops	Yes
Mode of Delivery	Live Real time Lecture and workshops
Biweekly Projects Sprint	Yes
Career Services Support	Yes





### **Agile Daily Learning Roadmap**





## Making Student Success Our Top Priority

Takeo Coding Bootcamps offers both the expertise and framework required to facilitate a transition into the field of coding. Every week, we communicate with individuals like yourself, who are undergoing a career shift.

#### **Bharat Pokhrel**

Software Engineer Ford Motor Company

Takeo offers "The Best Bootcamp in the Industry". If you are accepted into Takeo's bootcamp, you will go through a career-transforming experience.



#### Manjil Itani

Java Software Developer Bank of America

Career Services at Takeo after the bootcamp was remarkable. I was able to secure position within a week after finishing the bootcamp.





Takeo is more than just a technology education platform - it's a catalyst for lifechanging transformations.

We take pride in our exceptional team of Subject Matter Experts and engineers, who are notably experts in their fields but also passionate educators driven by a shared vision of transforming lives through technology through an innovative approach to education to help individuals achieve their career goals.

#### Our Grads Work with the Biggest Companies in the World

Our graduates work with world's most innovative tech companies and industry leaders. Discover your next career move





### **A Global Workplace**



#### **Headquarters:**

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Takeo Tech LLC Texas New Frisco, TX 75033 United States

Takeo India Pvt. Ltd. Visakhapatnam, AP India

Takeo Nepal Pvt. Ltd. Samakhusi, Kathmandu Nepal

www.takeo.ai





### Propel Your Tech Career to New Heights

Takeo holds the belief that education is a vital investment for your future achievements. Regardless of whether you opt for online learning. we remain committed to providing you with the tools and expertise required to succeed in areas such as software engineering, data science, cybersecurity, or product design. Our curriculum prioritizes immersive, outcomes-driven learning while fostering a supportive community of learners to help you realize your career aspirations.



### **Enroll now**

