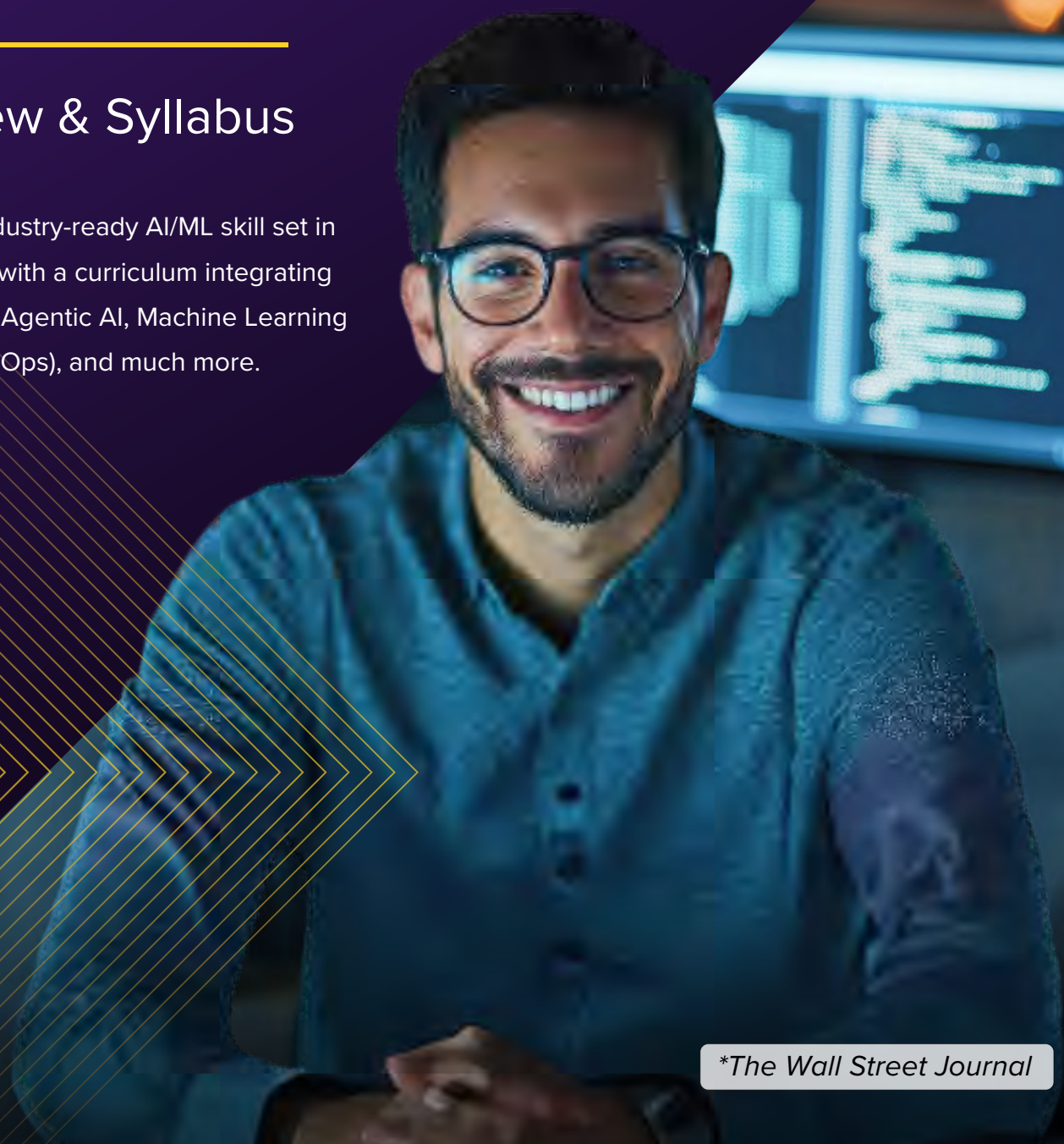


**#1** University in Louisiana\*

# AI & Machine Learning Bootcamp

## Overview & Syllabus

Develop an industry-ready AI/ML skill set in just 26 weeks with a curriculum integrating Generative AI, Agentic AI, Machine Learning Operations (MLOps), and much more.



*\*The Wall Street Journal*

# TABLE OF CONTENTS

|                                                                     |    |
|---------------------------------------------------------------------|----|
| About the AI & Machine Learning Bootcamp                            | 03 |
| Key Features                                                        | 04 |
| Louisiana State University Online and Fullstack Academy Partnership | 05 |
| AI & Machine Learning Industry Trends                               | 07 |
| AI Job Roles & Salaries                                             | 08 |
| Fullstack Academy Graduates' Achievements                           | 09 |
| Career Success Services                                             | 11 |
| Student Testimonials                                                | 12 |
| Certificate of Completion                                           | 13 |
| Curriculum Unit Overview                                            | 14 |
| Sample Projects                                                     | 16 |
| Eligibility Criteria                                                | 18 |
| Application Process                                                 | 18 |
| Curriculum                                                          | 19 |

# About the **AI & Machine Learning Bootcamp**

Artificial intelligence (AI) and machine learning (ML) are among the fastest-growing fields in tech, with AI projected to generate up to **\$23 trillion in annual economic value**, according to McKinsey Global Institute. As AI adoption accelerates, **66% of leaders say they wouldn't hire someone without AI skills**, and **75% of knowledge workers already use AI at work today**, as reported by the 2024 Work Trend Index Report. Professionals must acquire the in-demand skills to remain competitive in this rapidly evolving landscape. Employers are regularly seeking talent with AI skills, and roles in this space are growing more than **4x faster** than the national average, making now the ideal time to upskill.

The **Louisiana State University Online AI & Machine Learning Bootcamp**, in collaboration with Fullstack Academy, equips learners with the skills to meet this demand. Through live online classes, hands-on labs, projects, and assessments, you'll build knowledge in **Generative AI, Data Science, AI & Machine Learning, Deep Learning, MLOps, Natural Language Processing, Agentic AI Frameworks**, and more—while developing a portfolio of industry-relevant projects that showcase your abilities.

Upon completing this bootcamp, you will earn a **certificate of completion from Louisiana State University Online and Fullstack Academy**, which validates your skills to implement AI-driven transformation.

To help you translate skills into career success, the program includes **personalized 1:1 career coaching during the bootcamp and for up to a year following graduation**. From resume and LinkedIn profile optimization, mock interviews, and access to curated job boards, you'll have the resources needed to **stand out in the job market and launch a successful career in AI and machine learning**.

# Key Features



-  Go from **beginner to AI job-ready in just 26 weeks** with no prior tech experience required.
-  Leverage our **comprehensive career coaching services** to build or optimize the ideal AI & machine learning career for you, and enhance your visibility with top hiring companies.
-  Join a network of success—**over 1,500 companies across the U.S. have hired graduates** from Fullstack Academy Tech Bootcamps.
-  Study with Fullstack Academy, a trusted trailblazer in tech education with **600+ cohorts** delivered, plus gain access to a vast network of **13,000+ alumni** who can help open doors to new career opportunities.
-  Pursue a high-quality bootcamp program **rated 4.8 stars out of 5** by students and alumni (Course Report).
-  Earn a **certificate of completion** jointly issued by Louisiana State University Online and Fullstack Academy, validating your industry-ready skills.
-  Learn through **200+ hours of 100% live online classes** taught by industry-experienced professionals.
-  Engage in **15+ real-world, hands-on projects**, including **3 capstones** across various industries for your AI career preparation.
-  Gain exposure to **21+ tools and technologies** such as Python, Keras, TensorFlow, NumPy, OpenAI, MLFlow, ChatGPT, AWS Sagemaker, DALL-E, Hugging Face, LangChain, and more.

## Top Skills You'll Develop

- |                                                                                                                |                                                                                                                      |                                                                                                                   |
|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
|  MLOps Lifecycle Management |  AI & Machine Learning Algorithms |  Natural Language Processing |
|  Generative AI              |  Deep Learning                    |  LLMs and RAG                |
|  Agentic AI                 |  Data Science                     |  Prompt Engineering          |



# Louisiana State University Online and Fullstack Academy Partnership

# 1 University in Louisiana\* ◆

Louisiana State University Online (LSU Online)—consistently ranked among Kiplinger’s Top 100 Public Colleges—is one of the highest-rated public universities in Louisiana. It has proven to be a place where students can get an exceptional education with a great return on investment. LSU graduates earn \$20,000 more annually than the national average.

LSU Online has chosen Fullstack Academy to power its AI & Machine Learning Bootcamp. Fullstack Academy is one of the longest-running and most reputable tech bootcamps in the nation. Its graduates are equipped to succeed in the professional world through a foundational, active-learning teaching method, which prepares students to thrive in their first job and every job after. Bootcamp graduates also gain the assistance of the Fullstack Academy career services team and leave as members of the LSU Online and Fullstack Academy communities—with a supportive alumni network of over 13,000 graduates that can help open doors to future career opportunities.



*\*The Wall Street Journal*

# The Fullstack Academy Difference

Founded in 2012, Fullstack Academy is a pioneering and top-rated bootcamp provider that has helped over 13,000 graduates through 600+ cohorts to launch or accelerate their careers in tech.

## Fullstack Inclusion

Fullstack can help make your career goals possible, no matter your background. We're committed to providing a welcoming, diverse, and flexible learning environment.



## Fullstack Experience

Fullstack's rigorous curriculum focuses on the skills top-tier tech employers are seeking. Guided by passionate instructors and a caring career success team to assist with everything from interview prep to salary negotiations, you'll gain the confidence you need to build a fulfilling career.

## Fullstack Outcomes

We're obsessed with helping our students succeed, and it shows: 1,500+ companies across the U.S. have hired our graduates — including notable companies like Google, Amazon, LinkedIn, Bloomberg, Facebook, Capital One, and many more.



# AI & Machine Learning Industry Trends

The rapid growth of the global AI market is driven by factors such as increasing adoption of digital technologies, growing awareness of AI capabilities, and the convenience of online services. In 2025, the global AI market is valued at around \$391 billion and is projected to exceed \$1.81 trillion by 2030—increasing at a faster rate than past booms in cloud computing and mobile apps. Some key statistics highlighting the demand for AI expertise in today's workforce are:

**\$176,024**

is the **median salary of Machine Learning Engineers** in 2025 ([Indeed](#))

**66%**

of leaders say they wouldn't hire **someone without AI skills** ([2024 Work Trend Index Annual Report, Microsoft and LinkedIn](#))

**79%**

of professionals say they need **AI skills to remain competitive** in the job market ([2024 Work Trend Index Annual Report, Microsoft and LinkedIn](#))

**56%**

wage premium for workers with **AI skills now**, more than double last year's 25% wage premium ([2025 Global AI Jobs Barometer, PwC](#))

**100%**

of industries are **expanding their usage of AI**, including even industries less obviously exposed to AI, such as mining and construction ([2025 Global AI Jobs Barometer, PwC](#))

**71%**

of executives say they would hire a **less experienced candidate with AI skills than a more experienced candidate without them** ([2024 Work Trend Index Annual Report, Microsoft and LinkedIn](#))

As AI adoption gains momentum, the demand for professionals who can build, implement, and optimize AI solutions is soaring. Now is the time to develop the skills that will keep you ahead in this AI-driven future.

# AI Job Roles & Salaries

Here are sample AI and machine learning job titles, along with their potential annual average salaries, according to Indeed.

| Role                                       | Average Annual Salary | Annual Salary Range (USD) |
|--------------------------------------------|-----------------------|---------------------------|
| Data Scientist                             | \$129,058             | \$80,000 - \$205,000      |
| Computer Vision Engineer                   | \$151,262             | \$88,000 - \$258,000      |
| AI Product Manager                         | \$158,700             | \$110,000 - \$200,000     |
| AI Engineer                                | \$159,203             | \$98,000 - \$256,000      |
| Natural Language Processing (NLP) Engineer | \$159,737             | \$86,000 - \$250,000      |
| AI Research Scientist                      | \$161,506             | \$103,000 - \$252,000     |
| Machine Learning Engineer                  | \$176,000             | \$106,000 - \$290,000     |
| Solutions Architect (AI/ML)                | \$162,321             | \$113,418 - \$280,851     |





# Fullstack Academy Graduates' Achievements

## Top-Reported Salary: **\$350,000**

This is the maximum salary among graduates who have disclosed their post-bootcamp salaries.

## Average Salary: **\$76,038**

This represents the average salary of Fullstack Academy graduates who provided post-bootcamp salaries. However, the salary increases up to \$350,000 for some graduates, depending on various factors such as skills, experience, location, and employer.

## Alumni Network: **13,000+** graduates

Join over 13,000 students who have benefited from Fullstack Academy's industry-relevant curriculum and career preparation for in-demand tech roles.

## Graduation Rate: **89%**

This statistic is the percentage of students who have graduated from bootcamp or are close to graduation.



# Prominent Companies That Have Hired Fullstack Academy Graduates:

facebook

Google

Spotify

Bloomberg

Capital One

accenture



CIS Center for Internet Security

pepsi

Booz Allen

amazon

InsightGlobal

cvent



J.P.Morgan

verizon

Expedia

RioTinto

TOYOTA

TEKsystems  
Own change

gm FINANCIAL

citi

WGU  
WESTERN GOVERNORS UNIVERSITY

DATADOG



BlackRock

CENTENE  
Corporation

T Mobile

IXL  
LEARNINGCLOUDFIT  
SOFTWARE

andium

cogent

Etsy

simon

wayfair

...and many more

## Career Success Services

Starting in the bootcamp, you'll receive guidance and tools you'll need to power your job search. **During your bootcamp and for a full year after your graduation**, you can access the Fullstack Academy Career Success Program to help achieve your desired career outcomes.

**1,500+ companies across the U.S. have hired Fullstack Academy graduates**—everywhere from large tech firms to mid-size companies and innovative start-ups. You'll also join our expansive network of alums—building lasting connections to support you throughout your career.

Our career success support includes:

- ◆ **Access to a Curated Career Success Platform:** Integrated services to build a professional profile, optimize your resume & LinkedIn profile, explore a curated job board, attend events, and connect with coaches
- ◆ **Career Practicum Lessons:** Access to step-by-step career curriculum lessons and tools
- ◆ **Workshops & Webinars:** Live and on-demand interactive sessions with Career Coaches on job search, networking, interviewing, and more
- ◆ **1:1 Career Coaching:** Personalized sessions during the program and up to 12 months after your graduation for guidance on resumes, networking, interviews, and salary negotiation
- ◆ **Alumni & Industry Events:** Panels, guest experts, and networking opportunities to expand professional connections
- ◆ **Ongoing Support:** Continuous access to resources, tools, and expert advice to support career readiness and job search



## Student Testimonials



"Fullstack Academy lets you start as a beginner. The bootcamp was very immersive, and it felt like a two-year program covered in just six months. I learned a lot."

**Samantha Zanghi** 

AI & Machine Learning  
Bootcamp Graduate



"The most challenging part of the bootcamp is understanding the depth of topics. But the instructors were available every time to help us when I was stuck."

**Pavithra Raghudath** 

AI & Machine Learning  
Bootcamp Graduate



"The instructional team gives you really good advice and resources to improve your coding skills."

**Aleeya Garcia** 

AI & Machine Learning  
Bootcamp Graduate



"My favorite part of the bootcamp was my capstone project. I found myself surprised to have completed it successfully."

**Juan Pablo Gomez-Pineiro** 

AI & Machine Learning  
Bootcamp Graduate

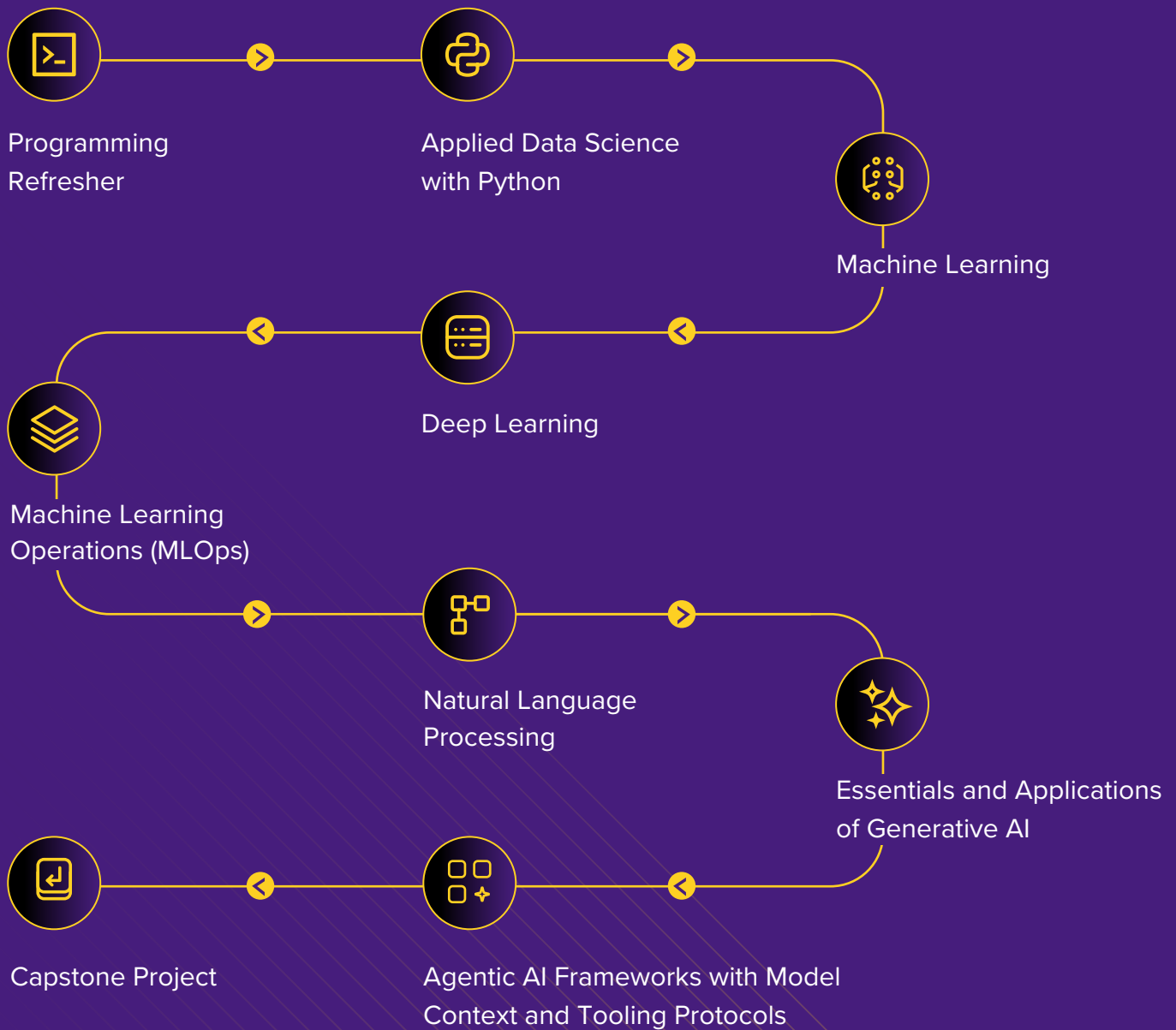
# Certificate of Completion

Upon completing the AI & Machine Learning Bootcamp, you'll receive a **Certificate of Completion** jointly issued by LSU Online and Fullstack Academy. These credentials will validate your skills as an industry-ready AI & machine learning professional.





# Curriculum Unit Overview



# Tools & Technologies Covered



Amazon  
SageMaker

mlflow™



Streamlit



TensorFlow



NumPy



Jupyter



OpenAI  
API

PyPDF2



Keras



Scikit  
learn



Hugging Face

matplotlib



OpenCV



ChatGPT



SciPy



seaborn



datetime



gradio



Chroma



PyTorch



python™



miro



pandas



uizard



LangChain



LangGraph



DALL-E

...and many more

# Sample Projects



## Personal Expense Tracker

Build a tracker where users log, categorize, and analyze expenses against a budget, with file-based saving and loading.



## Marketing Campaign Analysis

Perform exploratory data analysis and hypothesis testing to identify factors that influence customer acquisition.



## Home Loan Default Prediction

Use deep learning to predict loan defaults from historical, imbalanced datasets with multiple features.



## AI-Driven Design Generation

Explore OpenAI APIs to generate creative designs from text prompts for real-world scenarios.



## AI for Heritage & Tourism

Develop models to classify heritage structures from images and create a recommendation engine to guide tourists.



## Sales Analysis

Analyze quarterly sales data by region and generate insights to guide data-driven business decisions.



## Employee Turnover Analytics

Clean HR data, perform EDA and clustering, handle class imbalance with SMOTE, build ML models, and suggest retention strategies.



## AI-Powered HR Assistant

Create a chatbot using PDFs and vectorization to answer HR policy queries, with a Gradio-based user interface.



## Autonomous Driving Model

Build deep learning models to detect and localize vehicles in images, then analyze the impact of autopilot usage on road safety.



## Sales Forecasting for Restaurants

Forecast item-level sales across restaurants using historical data to enable smarter planning and decision-making.

\*The projects listed above are for illustrative purposes only and may be subject to change based on curriculum updates and industry relevance.



## Eligibility Criteria

For admission into the LSU Online AI & Machine Learning Bootcamp, candidates must meet the following qualifications:

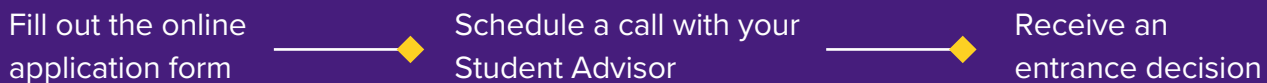
- ◆ Be at least 18 years or older
- ◆ Have earned a high school diploma or GED equivalent
- ◆ Have prior knowledge or experience in programming and/or intermediate mathematics (including linear algebra, probability, and statistics)

### Other Recommended Qualifications

- ◆ While not required for admission, at least 2+ years of formal work experience is recommended

## Application Process

The application process consists of three simple steps:



## Talk to a Student Advisor

Our team of dedicated student advisors will guide you through your bootcamp journey. They are available to:

- ◆ Address your questions about the admissions process
- ◆ Discuss available payment options, discounts, and scholarships
- ◆ Provide insight into the curriculum, program outcomes, and more

# Curriculum

## Unit 1

# Programming Refresher

You will acquire essential Python skills that will serve as one of the building blocks for your journey throughout the program. After starting with the fundamentals, you will quickly progress to more advanced concepts. If you're new to coding or looking to strengthen your programming skills, you'll get hands-on practice with real-world scenario-based projects. You'll also learn to work with Python's powerful file-handling techniques and functional programming methods, in addition to using tools like Jupyter Notebook.

## Key Learning Objectives

### Python Fundamentals

- ◆ Develop and execute Python programs for real-world applications.

### Python Data Types and Operators

- ◆ Learn essential Python data types and file-handling techniques.

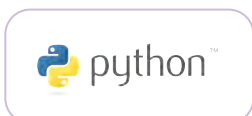
### Conditional Statements, Loops, and Python Functions

- ◆ Learn and apply decision control structures, looping mechanisms, and argument types in Python.

## Key Skills

- |                          |             |              |             |
|--------------------------|-------------|--------------|-------------|
| ◆ Python Fundamentals    | ◆ Variables | ◆ Loops      | ◆ Functions |
| ◆ Conditional Statements | ◆ Arrays    | ◆ Data Types | ◆ Operators |

## Tools & Technologies



\*Curriculum is subject to change.

## Unit 2

# Applied Data Science with Python

This unit provides a comprehensive understanding of data science essentials, including data preparation, model building, and evaluation. You will learn concepts like strings, Lambda functions, and lists. Additionally, you will explore topics like NumPy, linear algebra, and statistical concepts, including measures of central tendency and dispersion, skewness, covariance, and correlation. The unit also covers hypothesis testing, such as Z-test, T-test, and ANOVA, and data manipulation using pandas. You will also develop data visualization skills using popular libraries.

## Key Learning Objectives

### Python Libraries for Data Science

- ◆ Utilize Python libraries for data science and perform advanced data manipulation and analysis with NumPy and Pandas.

### Hypothesis Testing and Data Manipulation

- ◆ Conduct hypothesis testing and statistical analysis, and implement data cleaning, transformation, and feature engineering techniques

## Key Skills

- ◆ Data Visualization
- ◆ Data Analysis
- ◆ Statistical Analysis
- ◆ Data Cleaning
- ◆ Arrays
- ◆ Hypothesis Testing
- ◆ Data Wrangling
- ◆ Data Pre-processing
- ◆ Probability Distribution

## Tools & Technologies



## Unit 3

# Machine Learning

This unit provides a comprehensive overview of various machine learning types and their applications. You will explore the machine learning pipeline and gain insights into supervised learning, regression models, and classification algorithms. The unit also covers unsupervised learning, clustering techniques, ensemble modeling, and evaluation of popular machine learning frameworks.

## Key Learning Objectives

### Understanding Machine Learning Models

- ◆ Understand and differentiate types of machine learning models.
- ◆ Apply supervised learning techniques to classification and regression problems.

### Develop, Train, and Validate Machine Learning Models

- ◆ Develop and train machine learning models using Python packages.
- ◆ Evaluate and validate machine learning models using performance metrics.
- ◆ Apply machine learning models to real-world use cases.

## Key Skills

- ◆ Supervised Learning
- ◆ Unsupervised Learning
- ◆ Ensemble Learning
- ◆ Recommendation Systems

## Tools & Technologies



Unit 4

Deep Learning

This unit teaches how to implement deep learning using AI and machine learning frameworks like Keras and TensorFlow. You will explore the fundamental concepts and applications of deep learning while studying the distinctions between deep learning and machine learning. This unit covers a wide range of topics, including neural networks, forward and backward propagation, TensorFlow, Keras, performance optimization techniques, model interpretability, convolutional neural networks (CNNs), transfer learning, object detection, recurrent neural networks (RNNs), autoencoders, and creating neural networks. By the end of the unit, you will have a solid foundation in deep learning principles and the knowledge to build and optimize deep learning models with Keras and TensorFlow.

Key Learning Objectives

- Implementing and Optimizing Deep Neural Networks

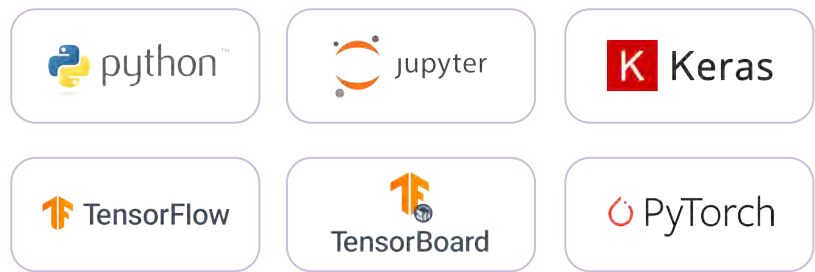
  - ◆ Design and implement deep neural networks for image and text classification.
  - ◆ Apply advanced optimization algorithms to enhance model training.
- Improving Model Accuracy and Developing Sequential Models

  - ◆ Utilize transfer learning and object detection based on real-world use cases.
  - ◆ Perform hyperparameter tuning and regularization for improved model accuracy.
  - ◆ Develop sequential models for time-series and video data classification.

Key Skills

- ◆ Deep Neural Networks
  - ◆ Convolutional Neural Networks
  - ◆ Recurrent Neural Networks
- ◆ Optimization Algorithms
  - ◆ LSTM
  - ◆ Gated Recurring Networks

Tools & Technologies



\*Curriculum is subject to change.



Unit 5

Machine Learning Operations (MLOps)

This unit provides a comprehensive understanding of operationalizing machine learning systems using modern MLOps practices. You will learn the core principles of MLOps and how to build scalable, automated, and reproducible workflows. You will explore the end-to-end MLOps lifecycle, including data validation, feature engineering, model training, deployment, and monitoring. You will also learn to build automated CI/CD pipelines, track experiments, manage model versions, and containerize workflows with Docker.

You will gain hands-on experience deploying and monitoring ML models with Prometheus, Grafana, and AWS CloudWatch, while using AWS services including SageMaker, S3, and EC2 to build cloud-native, secure pipelines.

Key Learning Objectives

Implementing, Automating, and Scaling End-to-End ML Pipelines

- ◆ Build automated ML pipelines using CI/CD, version control, experiment tracking, and deployment workflows.
- ◆ Monitor model performance, detect drift, and trigger automated retraining to maintain reliability at scale.

Building Cloud-Native, Production-Ready MLOps Systems

- ◆ Deploy and manage ML models on AWS using SageMaker, Lambda, S3, EC2, and Step Functions.
- ◆ Apply containerization, orchestration, and Infrastructure as Code to secure, optimize, and scale ML operations.

Key Skills

- ◆ MLOps Lifecycle Management
- ◆ CI/CD for Machine Learning
- ◆ Infrastructure as Code (IaC)
- ◆ Cloud-Native MLOps (AWS)
- ◆ Model Deployment & Monitoring
- ◆ Model Versioning & Experiment Tracking

Tools & Technologies

 Amazon SageMaker

 mlflow

 docker

 IAM

 amazon S3

 git

 GitHub

 CloudWatch

 CloudTrail

 EC2

 Grafana

 Codebuild

 Codepipeline

 CloudFormation

 Terraform

 Prometheus

\*Curriculum is subject to change.

## Unit 6

# Natural Language Processing

This unit focuses on Natural Language Processing (NLP), where you'll learn how to turn raw text into meaningful insights. From understanding key NLP concepts like tokenization and syntactic analysis to exploring advanced techniques such as word embeddings and text classification, you'll gain hands-on experience with real-world scenarios and use cases. Whether building sentiment analysis models or working with popular tools like NLTK, you'll be guided through every step. By the end of the unit, you'll have the skills to preprocess, analyze, and model text data, and be prepared to address NLP challenges in various domains.

## Key Learning Objectives

### Build and Implement NLP Models

- ◆ Preprocess and transform text data for NLP tasks.
- ◆ Build and implement NLP models for text classification and sentiment analysis.

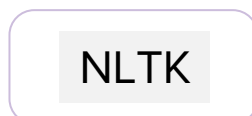
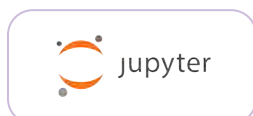
### Advanced NLP Models

- ◆ Utilize word embeddings to enhance text representation in NLP models.
- ◆ Develop and evaluate machine translation systems.
- ◆ Implement advanced NLP models using sequence modeling and attention

## Key Skills

- ◆ Text Data Analysis
- ◆ Vector Representations
- ◆ Sequence Model
- ◆ Attention Model
- ◆ Sentiment Analysis

## Tools & Technologies



Unit 7

# Essentials and Applications of Generative AI

Generative AI is discussed in depth throughout this unit, from foundational concepts to advanced applications. You'll explore key generative models like Variational Autoencoders (VAEs) and Generative Adversarial Networks (GANs), and understand how transformers and attention mechanisms power the latest AI breakthroughs. With hands-on practice, you'll learn to build, fine-tune, and deploy models. By the end of the unit, you'll be equipped to design and optimize AI models for a wide range of real-world tasks, including text generation, chatbot development, and image synthesis.

## Key Learning Objectives

### Generative AI Models, Transformer Models, and Attention Mechanisms

- ◆ Design and implement generative AI models for various applications.
- ◆ Understand and apply attention mechanisms in transformer models.

### Large Language Models (LLMs)

- ◆ Develop and fine-tune large language models (LLMs) for enhanced performance.
- ◆ Apply the LangChain framework to build generative AI applications
- ◆ Optimize and evaluate generative AI models using hyperparameter tuning and benchmarking

## Key Skills

- ◆ Prompt Engineering
- ◆ Model Fine-tuning
- ◆ Text-to-image
- ◆ Chatbot App Development
- ◆ Document Loader
- ◆ Vector Embedding
- ◆ Text Splitters

## Tools & Technologies

 python™

 LangChain

 OpenAI

 Hugging Face

 uizard

 FalconLLM

 gradio

 Stable Diffusion

 DALL-E

 ChatGPT

 FAISS

 miro

 Gemini

 Google  
T5XXL

\*Curriculum is subject to change.

Unit 8

# Agentic AI Frameworks with Model Context and Tooling Protocols

This unit provides a comprehensive understanding of designing, building, and implementing agentic AI systems using frameworks such as LangGraph, AutoGen, CrewAI, and the Model Context Protocol (MCP). You will explore fundamental agentic AI concepts, understand how they differ from traditional AI, and learn why they are essential for enterprise automation. You will work with LLM agents, agentic architectures, perception and action modules, multi-agent workflows, prompt chaining, parallel execution, intelligent routing, and node-and-edge graph structures.

You will also learn to use MCP to connect AI applications with external tools, solve NxM integration challenges, and deploy intelligent multi-agent systems effectively.

## Key Learning Objectives

### Designing and Optimizing Agentic AI Systems

- ◆ Build LLM agents using core perception, cognitive, and action modules.
- ◆ Optimize agentic workflows with chaining, parallel execution, routing, and collaboration.
- ◆ Customize and structure dynamic workflows using memory, tools, and node–edge architectures across LangGraph, AutoGen, and CrewAI.

### Implementing Model Context Protocol (MCP) for Advanced Tooling and Integration

- ◆ Use MCP to enhance tool connectivity, solve the NxM integration problem, and improve the reliability of function calling.
- ◆ Apply MCP architecture concepts, including sessions, communication layers, and server–client roles, to build scalable, tool-aware AI systems.

## Key Skills

- ◆ Agentic AI Architecture
- ◆ LLM Agent Design
- ◆ Multi-Agent Collaboration
- ◆ Graph-Based Workflow Design
- ◆ Prompt Chaining & Routing
- ◆ Model Context Protocol (MCP) Implementation

## Tools & Technologies

 LangGraph

 crewai

 Model Context Protocol

JSON-RPC 2.0

 python MCP

AutoGen

 Streamlit

\*Curriculum is subject to change.

## Unit 9

# Capstone Project

The capstone project provides a valuable opportunity to implement the skills learned throughout this bootcamp. You will solve industry-specific challenges by applying various AI and ML techniques. The capstone project will help you showcase your knowledge and skills to employers.

## Key Learning Objectives

The capstone project will enhance your understanding of the AI decision cycle. It will include performing exploratory data analysis, building and fine-tuning a model with cutting-edge AI-based algorithms, and presenting results.





# LSU Online



**APPLY NOW**

[bootcamp.online.lsu.edu/programs/ai-machine-learning](https://bootcamp.online.lsu.edu/programs/ai-machine-learning)

[info.lsu@fullstackacademy.com](mailto:info.lsu@fullstackacademy.com)