



AI SUMMER CAMP FOR TEENS & GRADUATES (45 DAYS PROGRAM)

PROGRAM OVERVIEW:

DURATION: 45 DAYS

**TARGET AGE GROUP: 17 TO 21
YEARS**

MODE: ONLINE

**OUTCOME: AI CERTIFICATE UPON
COMPLETION**



LEARN, CREATE & INNOVATE!

ATTENDING AN AI SUMMER CAMP OFFERS A TRANSFORMATIVE EXPERIENCE FOR BOTH TEENS AND GRADUATES BY PROVIDING AN IMMERSIVE INTRODUCTION TO THE WORLD OF ARTIFICIAL INTELLIGENCE.

PARTICIPANTS LEARN ESSENTIAL PROGRAMMING LANGUAGES LIKE PYTHON AND GAIN HANDS-ON EXPERIENCE WITH POWERFUL TOOLS SUCH AS TENSORFLOW AND OPENCV, ENABLING THEM TO WORK ON REAL-WORLD PROJECTS AND CHALLENGES.

THIS BLEND OF TECHNICAL TRAINING AND CREATIVE PROBLEM-SOLVING NOT ONLY ENHANCES CRITICAL THINKING AND INNOVATION BUT ALSO BUILDS A ROBUST PORTFOLIO THAT IS ATTRACTIVE TO COLLEGES AND FUTURE EMPLOYERS.

MOREOVER, THE CAMP OFFERS EXPERT MENTORSHIP, NETWORKING OPPORTUNITIES, AND EXPOSURE TO INDUSTRY TRENDS, EQUIPPING STUDENTS WITH THE SKILLS AND CONFIDENCE NEEDED TO EXCEL IN THE RAPIDLY EVOLVING TECH LANDSCAPE.

WEEK 1: INTRODUCTION TO AI & MACHINE LEARNING

DAY 1-2: INTRODUCTION TO AI AND ITS IMPACT (REAL-WORLD EXAMPLES: SELF-DRIVING CARS, SMART HOMES)

DAY 3-4: BASICS OF DATA SCIENCE & ALGORITHMS (DATA STRUCTURES, BASIC ALGORITHMS)

DAY 5-7: INTRODUCTION TO MACHINE LEARNING (SUPERVISED VS UNSUPERVISED LEARNING, INTRODUCTION TO PYTHON)

DAY 8-10: DEEP LEARNING INTRODUCTION (NEURAL NETWORKS AND BASIC CONCEPTS OF DEEP LEARNING)

REAL-TIME PROJECT:

- BUILD A PREDICTIVE MODEL: LEARN TO CREATE A MACHINE LEARNING MODEL TO PREDICT OUTCOMES USING REAL-WORLD DATASETS (E.G., PREDICTING HOUSE PRICES, OR WEATHER CONDITIONS).**

WEEK 2: ADVANCED AI TOOLS & TECHNIQUES

- DAY 11-13: EXPLORING NEURAL NETWORKS AND DEEP LEARNING (INTRODUCTION TO DEEP LEARNING AND NEURAL NETWORKS)**

DAY 14-16: INTRODUCTION TO DEEP LEARNING FRAMEWORKS (TENSORFLOW, KERAS, AND PYTORCH)

DAY 17-19: IMAGE RECOGNITION WITH CONVOLUTIONAL NEURAL NETWORKS (CNN)

DAY 20-21: NATURAL LANGUAGE PROCESSING (NLP): UNDERSTANDING AND ANALYZING TEXT DATA

REAL-TIME PROJECT:

- BUILD AN IMAGE CLASSIFIER: DEVELOP A CONVOLUTIONAL NEURAL NETWORK (CNN) TO CLASSIFY IMAGES FROM A DATASET SUCH AS MNIST OR CIFAR-10.**

WEEK 3: AI IN ROBOTICS AND AUTOMATION

DAY 22-24: INTRODUCTION TO ROBOTICS AND AI (ROLE OF AI IN ROBOTICS, BASIC PRINCIPLES)

DAY 25-27: PROGRAMMING A ROBOT (SIMULATE ROBOT BEHAVIOR IN SOFTWARE; INTRODUCTION TO ROS)

DAY 28-30: AI IN AUTOMATION (OPTIMIZING SYSTEMS WITH AI, APPLICATIONS IN MANUFACTURING, LOGISTICS)

REAL-TIME PROJECT:

AUTONOMOUS ROBOT SIMULATION: PROGRAM A SIMULATED ROBOT TO DETECT AND AVOID OBSTACLES OR PERFORM A TASK AUTONOMOUSLY.

WEEK 4: AI IN DATA SCIENCE AND BUSINESS

DAY 31-33: DATA SCIENCE FOUNDATIONS (EXPLORING DATASETS, STATISTICAL ANALYSIS, AND MACHINE LEARNING MODELS)

DAY 34-36: PREDICTIVE ANALYTICS IN BUSINESS (DEVELOPING PREDICTIVE MODELS TO FORECAST BUSINESS TRENDS OR CUSTOMER BEHAVIOR)

DAY 37-39: RECOMMENDER SYSTEMS (BUILDING PERSONALIZED RECOMMENDATION ENGINES)

DAY 40-42: AI IN HEALTHCARE (PREDICTIVE MODELS FOR DISEASE DIAGNOSIS, HEALTH DATA ANALYTICS)

REAL-TIME PROJECT:

CREATE A RECOMMENDER SYSTEM: DEVELOP A MOVIE, BOOK, OR PRODUCT RECOMMENDATION SYSTEM USING COLLABORATIVE FILTERING TECHNIQUES.

WEEK 5: DEPLOYMENT AND CLOUD AI

DAY 43-44: DEPLOYING AI MODELS

(INTRODUCTION TO CLOUD PLATFORMS LIKE AWS AND GOOGLE CLOUD, SETTING UP AI SERVICES)

DAY 45: FINAL PROJECT PRESENTATION AND CERTIFICATION CEREMONY (SHOWCASE FINAL PROJECTS TO PEERS AND MENTORS)

REAL-TIME PROJECT:

DEPLOY AN AI MODEL: DEPLOY THE FINAL AI MODEL CREATED DURING THE CAMP TO THE CLOUD AND MAKE REAL-TIME PREDICTIONS.

KEY LEARNING OUTCOMES:

- UNDERSTANDING CORE AI AND MACHINE LEARNING CONCEPTS AND TECHNIQUES.**
- HANDS-ON EXPERIENCE WITH DEEP LEARNING FRAMEWORKS LIKE TENSORFLOW, KERAS, AND PYTORCH.**
- ABILITY TO DEVELOP AND DEPLOY PREDICTIVE MODELS, CLASSIFIERS, AND RECOMMENDATION SYSTEMS.**

- **INSIGHT INTO THE ROLE OF AI IN ROBOTICS, BUSINESS, AND HEALTHCARE.**
- **EXPOSURE TO CLOUD-BASED AI DEPLOYMENT FOR REAL-TIME APPLICATIONS.**

CERTIFICATION:

- **STUDENTS WILL RECEIVE A CERTIFICATE OF COMPLETION AND A PORTFOLIO OF REAL-TIME PROJECTS THAT SHOWCASE THEIR AI SKILLS.**

THIS PROGRAM IS DESIGNED TO FOSTER CRITICAL THINKING AND INNOVATION AMONG TEENS AND ENGINEERING STUDENTS, GIVING THEM THE SKILLS TO EXCEL IN THE RAPIDLY GROWING FIELD OF ARTIFICIAL INTELLIGENCE.