








# EVER WONDERED HOW SPOTIFY RECOMMENDS SONGS??

**INTRODUCTION TO DEEP LEARNING !!**

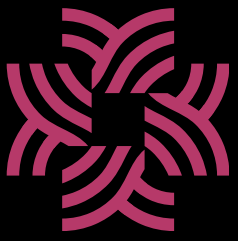
The Red Jumpsuit Apparatus

### Recommended songs

Based on the songs of this playlist

-  **Gasoline**  
Point North
-  **Chasing Ghosts**  
E Calling All Captains
-  **BCKYRD**  
Hot Mulligan
-  **\*Equip Sunglasses\***  
E Hot Mulligan
-  **Drop Dead**





Deep  
learning?



SWIPE RIGHT TO KNOW  
MORE ABOUT DEEP LEARNING



🔍 DEEP LEARNING: TEACHING MACHINES TO THINK!

🗣️ POWERING YOUR VOICE ASSISTANT

🎨 CREATING ART WITH AI

🎗️ FROM CAT PICS TO CANCER DETECTION





# INTRODUCTION

## DEEP LEARNING:

- **DEEP LEARNING, A SUBSET OF MACHINE LEARNING, FOCUSES ON ALGORITHMS INSPIRED BY THE STRUCTURE AND FUNCTION OF THE BRAIN CALLED ARTIFICIAL NEURAL NETWORKS.**
- **IT HAS REVOLUTIONISED VARIOUS FIELDS, SUCH AS COMPUTER VISION, NATURAL LANGUAGE PROCESSING, AND ROBOTICS.**
- **DEEP LEARNING MODELS CAN AUTOMATICALLY EXTRACT FEATURES FROM RAW DATA, MAKING THEM HIGHLY EFFECTIVE FOR COMPLEX TASKS LIKE IMAGE RECOGNITION, SPEECH SYNTHESIS, AND AUTONOMOUS DRIVING.**

Swipe





# MOTIVATION

- **CAREER OPPORTUNITIES:** DEEP LEARNING EXPERTISE IS IN HIGH DEMAND ACROSS INDUSTRIES, FROM TECH GIANTS TO STARTUPS. IT OPENS DOORS TO ROLES LIKE DATA SCIENTIST, MACHINE LEARNING ENGINEER, AI RESEARCHER, AND MORE.
- **INNOVATION AND IMPACT:** DEEP LEARNING DRIVES INNOVATION, SOLVING PREVIOUSLY THOUGHT UNSOLVABLE PROBLEMS. IT CAN BE APPLIED TO HEALTHCARE, FINANCE, ENTERTAINMENT, AND MANY OTHER SECTORS, MAKING A SIGNIFICANT IMPACT.
- **CONTINUOUS LEARNING:** DEEP LEARNING RAPIDLY EVOLVES WITH NEW RESEARCH, TOOLS, AND TECHNIQUES. THIS ENSURES CONTINUOUS LEARNING AND GROWTH FOR THOSE PASSIONATE ABOUT TECHNOLOGY AND AI.

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# ROAD MAP

1

## FOUNDATIONAL KNOWLEDGE

- **MATHEMATICS:** LINEAR ALGEBRA, CALCULUS, PROBABILITY, AND STATISTICS.
- **PROGRAMMING:** PROFICIENCY IN PYTHON IS ESSENTIAL. BASIC FRAMEWORKS LIKE NUMPY AND PANDAS IS REQUIRED.
- **MACHINE LEARNING BASICS:** UNDERSTAND SUPERVISED, UNSUPERVISED, AND REINFORCEMENT LEARNING.

2

## CORE DEEP LEARNING CONCEPTS

- **NEURAL NETWORKS:** LEARN ABOUT PERCEPTRONS, ACTIVATION FUNCTIONS, AND BACKPROPAGATION.
- **DEEP NEURAL NETWORKS:** STUDY ARCHITECTURES LIKE CNNs, RNNs, LSTMS, AND GANS.
- **FRAMEWORKS:** GAIN HANDS-ON EXPERIENCE WITH FRAMEWORKS LIKE TENSORFLOW, PYTORCH, AND KERAS.

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# ROAD MAP

3

## PRACTICAL IMPLEMENTATION

- **PROJECTS:** WORK ON REAL-WORLD PROJECTS LIKE IMAGE CLASSIFICATION, SENTIMENT ANALYSIS, AND LANGUAGE TRANSLATION.
- **COMPETITIONS:** PARTICIPATE IN PLATFORMS LIKE KAGGLE TO APPLY YOUR SKILLS AND LEARN FROM OTHERS.

4

## ADVANCED TOPICS

- **MODEL OPTIIMIZATION:** TECHNIQUES LIKE REGULARISATION, DROPOUT, AND HYPERPARAMETER TUNING.
- **DEPLOYMENT:** LEARN HOW TO DEPLOY MODELS USING CLOUD SERVICES AND EDGE DEVICES.
- **RESEARCH PAPERS:** STAY UPDATED WITH THE LATEST RESEARCH BY READING PAPERS.

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# ROAD MAP

5

## SPECIALIZATION

- **CHOOSE A NICHE WITHIN DEEP LEARNING, SUCH AS COMPUTER VISION, NATURAL LANGUAGE PROCESSING, OR REINFORCEMENT LEARNING, AND DEEPEN YOUR EXPERTISE.**

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# RESOURCES

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**100 DAYS OF MACHINE LEARNING**  
Introduction to ML

Day #  
1

**100 Days of Machine Learning**

CampusX

132 videos 3,853,327 views Last updated on May 4,...

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# RESOURCES

**100 DAYS OF  
DEEP LEARNING**

**COURSE  
ANNOUNCEMENT**

**100 Days of Deep  
Learning**

**MIT 6.S191: Introduction  
to Deep Learning**

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# SUGGESTIONS

- **IT MIGHT LOOK LIKE A LOT, BUT BUILDING EVERYTHING STEP BY STEP MAKES IT MUCH EASIER.**
- **HAVE A GOOD GRIP ON YOUR BASICS LIKE NUMPY, PANDAS, AND MACHINE LEARNING FUNDAMENTALS.**
- **IT'S CRUCIAL TO UNDERSTAND THE CONCEPTS THOROUGHLY BEFORE DIVING INTO CODING.**
- **ONCE YOU FEEL GOOD WITH THE THEORY PART, REGULARLY WORK ON PROJECTS AND EXPERIMENTS TO APPLY THEORETICAL KNOWLEDGE.**
- **IF YOU FEEL STUCK, DON'T FEEL SHY ABOUT SEEKING HELP FROM THE INTERNET OR YOUR SENIORS.**
- **DO NOT FORGET TO UPDATE YOUR KNOWLEDGE OF GROWING TECHNOLOGY.**

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