

SAMSUNG

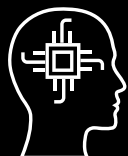
Samsung Innovation Campus

AI Course



Together for Tomorrow!
Enabling People

Education for Future Generations



AI Course

Samsung Innovation Campus offers best-in-class AI course. Through the course, students can:

- ✓ Focuses on building fundamental capabilities of AI modeling on a concrete foundation of mathematics, including linear algebra, probability and statistics.
- ✓ Introduces A to Z in Machine Learning tools, from NumPy to Keras, and techniques including CNN and practice with hands-on exercises.
- ✓ Receive 80 hours of real-world problem solving experience as a capstone project, handling open-source data with participants' own AI

Basic Course Information

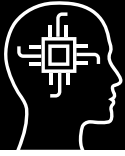
❖ Learning Hour	350 hours in total
❖ Topics covered	Machine learning, Deep learning, Data processing, etc.
❖ Course Organization	Lecture, hands-on exercise and capstone project
❖ Learning Materials	Text book and exercise workbook

Course Objective

- Understand linear algebra, probability and statistics that are the essential math for machine learning
- Be able to do data preprocessing with the Python libraries (NumPy and Pandas) for the execution of optimal machine learning models and data visualization
- Explore supervised and unsupervised learning and be able to apply the most suitable machine learning algorithm.
- Learn to process textual data to derive highquality information from text and apply new insights to real-world business (NLP)
- Build and train deep neural networks, use the deep learning libraries such as TensorFlow and Keras to gain proficiency, as well as handle various deep learning techniques.

Recommended to

- Youth
 - who are interested in pursuing a career in AI, and need appropriate education for the career
 - who successfully completed high-school-level or higher-level STEM courses with basic knowledge in programming and statistics



Prerequisites

- Mathematics
 - Strong foundation of algebra
 - Basic understanding of linear algebra
- Coding Experience
 - Python programming, Jupyter Notebook, Data structure and algorithm as problem solving ability
- Basic Statistics
 - Understanding of probability and statistics fundamentals

Course Syllabus

Lecture + Exercise (8 weeks)

Ch.1	Introduction to Artificial Intelligence
Ch.2	Math for Data Science
Ch.3	NumPy Arrays for Optimized Numerical Computation & Pandas for Exploratory Data Analysis
Ch.4	Probability and Statistics
Ch.5	Machine Learning: Supervised Learning
Ch.6	Machine Learning: Unsupervised Learning
Ch.7	Natural Language Processing and Language Models for Text Mining
Ch.8	Neural Network and Deep Learning
Ch.9	Various Deep Learning Techniques

Capstone Project (4 weeks)

Ch.10	Starting an AI Project
Ch.11	AI Capstone Project Tutorial

**course schedule is subject to change.*

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