

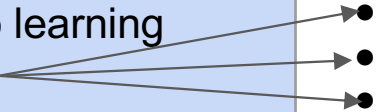
A GUIDED TOUR OF AI: FROM FOUNDATIONS TO LATEST APPLICATION



Day 1		
9am - 10am	<u>Welcome Address</u>	Description
10am - 11am	<u>Lecture 1</u> Mathematics for Machine Learning OED GY Content PI: OED	<ul style="list-style-type: none"> • Functions: Basic definitions and examples • Continuous function and derivatives • Extrema, Gradients and Chain Rule - Examples and plots using GeoGebra • Calculating local minima
11am - 12pm		
12pm - 1pm	Lunch Break	
1pm - 2pm	<u>Computer Lab 1</u> Introduction to Python programming TC+MP MDR+ZE MS+AA Content PI: MDR	<ul style="list-style-type: none"> • Introduction to Google Colab • Packages - Numpy, Pandas, Matplotlib • Basic arithmetic operations • Data structures - list, dataframe, strings, dictionary, factors, derivatives • Manipulating data frames, loops • Data visualization - line, histogram, bar chart, boxplot
2pm - 3pm		
3pm - 4pm		
4pm - 7pm	<u>Sports</u>	

	Day 2	
9am - 10am		Description
10am - 11am	<u>Lecture 2</u> Optimization in practice AT TC Content PI: TC	<ul style="list-style-type: none"> • Basic data preprocessing and descriptive statistics • Supervised ML: Regression & Classification • Fitting a line to data - intuition • Multiple Linear Regression • Gradient Descent
11am - 12pm		
12pm - 1pm	Lunch Break	
1pm - 2pm	<u>Computer Lab 2</u> Hands on session manipulating datasets TC+MP MDR+MS AT+AA Content PI: TC	<ul style="list-style-type: none"> • Package sklearn • Datasaurus dozen • Hands on - spurious Correlation • Galton's Board - hands on • Causality in ML • One practical regression problem with step-by-step solution - height and weight data of students
2pm - 3pm		
3pm - 4pm		
4pm - 7pm	<u>Sports</u>	

	Day 3	Description
9am - 10am	<u>Full-day session</u> A dive into deep learning and applications OED GY Content PI: GY	<ul style="list-style-type: none"> • Example of system of linear equation - brother & sister shopping (or any real world example) • Matrix Algebra - addition, multiplication, determinant • Singular Matrix • Pictorially studying eigenvalues and eigenvectors
10am - 11am		
11am - 12pm		
12pm - 1pm	Lunch Break	
1pm - 2pm	<u>Full-day session</u> A dive into deep learning and applications MDR+EAH LS+MP MS+AA Content PI: EAH (+ TC)	<ul style="list-style-type: none"> • Gradient Descent • Back propagation • Activation functions • Designing a simple ANN • Package : keras • Application of MNIST digit data
2pm - 3pm		
3pm - 4pm		
4pm - 7pm	<u>Sports</u>	

Day 4		Description	
9am - 10am	<u>Workshop 1</u> Application of deep learning LS (1 hr) MS (1 hr) AA (1 hr)	 <ul style="list-style-type: none"> • Application of deep learning, • Transformers and time series application • Real Example with Audio or Text Data 	
10am - 11am			
11am - 12pm			
12pm - 1pm	Lunch Break		
1pm - 2pm	<u>Sports</u>		
2pm - 3pm			
3pm - 4pm			
4pm - 7pm			

	Day 5	Description
9am - 10am	<u>Workshop 2</u> Image Processing MP MS AA Content PI: MP	<ul style="list-style-type: none">• Basic image operations• Image resizing• Average and Uniform filters• Image Rotation• Color channels and transformations• Creating image in Python
10am - 11am		
11am - 12pm		
12pm - 1pm	Lunch Break	
1pm - 2pm		
2pm - 3pm	Movie on AI and subsequent discussions with a panel of experts from the Paris and Abu Dhabi campuses	
3pm - 4pm		
4pm - 7pm		

	Day 6	Projects
9am - 10am	Hackathon Competition at SCAI Abu Dhabi	<ul style="list-style-type: none">• Predicting oil prices for the last week using Transformers (LS + TC)• Resizing your own image in Python (MS + AA)• House price prediction (ZE + TC)• Classifying Fashion MNIST data (MP + TC)• Text Classification (EAH)• Visualizing and interpreting supermarket data (MDR)
10am - 11am		
11am - 12pm		
12pm - 1pm	Lunch Break	
1pm - 2pm	Hackathon Competition at SCAI Abu Dhabi	
2pm - 3pm		
3pm - 4pm		
4pm - 5pm		
5pm - 7pm	<u>Sports</u>	

The Team

- Omar El Dakkak (OED)
- Tanujit Chakraborty (TC)
- Alejandro Tejedor (AT)
- Grace Younes (GY)
- Maxence de Rochechouard (MDR)
- Esra Alhadhrami (EAH)
- Madhurima Panja (MP)
- Maya Sahraoui (MS)
- Aniss Acherar (AA)
- Lena Sasal (LS)
- Zakaria Elabid (ZE)