Data Science Summer School – Haifa 2023

4-7.9.23, 10-13.9.23, 08:30-18:30, University of Haifa (main campus)

3 academic credit points

Coordinated by: Dr. David Deutsch (Dept. of Neurobiology, University of Haifa)

Dr. Daniel Sher (Dept. of Marine Biology, University of Haifa)

Dr. Uri Hertz (Dept. of cognitive sciences, University of Haifa)

Dr. Tomer sidi (Data Science Research Center)

Dr. Iftach Amir (University of Haifa)

Guest lecturers: TBD

Over the last few years data science tools, and especially machine learning (ML) techniques, have become increasingly popular and are now widely used in both the academia and the industry. The Haifa Data Science Summer School provides an overview of the variety of tools employed in machine learning. The course is aimed for students from diverse disciplines, with no prior experience using Machine-learning, and with a minimal experience in programming. Our aim is to give each student enough theoretical and practical background to allow them to apply a wide range of ML techniques in their own work.

Topics we will cover include exploratory data analysis, supervised learning (regression and classification, neural networks) and unsupervised learning (clustering, dimensionality reduction). For each topic, we start from an introduction, then discuss its uses, strengths, and limitations, then dedicate time for hands-on experience. Special attention will be devoted on applying the methodologies introduced in class on empirical data using Jupyter notebooks coded in Python, with the machine-learning package 'Scikit-learn' (https://scikit-learn.org/).

It is an intense 8-day course (8:30am-6:30pm daily), with a final project. Students are expected to attend to all the meetings. Basic Python programming is a required. There will be a 4-hour prep meeting for students who wish to brush up on their Python skills, and we will also share some recommended online sources. Upon completion of the course requirements, registered students will be credited 3 academic points. The course will be given in English.

The course is open to 50 advanced (MSc and PhD) students, postdocs and research scientists from the university of Haifa and affiliated institutes (e.g. Oranim). Advanced undergraduate students are also welcome to apply and will be accepted based on free space. Participants taking the course for academic credit are **required to register** and to submit a final course project.

Application process

Applicants must fill in the online registration form, providing information about their background, motivation, and programming experience.

Following an optional attendance to the preparation day (where we will refresh your Python skills, focusing on 'Pandas'), all students will get a small Python project to submit as a perquisite for final acceptance to the course. The project is basic and will not be graded. The sole purpose of this mini project is to ensure that you have the basic skills in Python programming that will allow you to complete the summer course.
Final acceptance will be sent following the successful completion of the project.

Registration is now open - please register online at registration link - [Data Science Summer School](#)

For more information please contact:

David Deutsch: ddeutsch1@univ.haifa.ac.il
Daniel Sher: dsher@univ.haifa.ac.il

<u>Important dates:</u>
Application deadline: July 1st , 2023
Acceptance letters: July 15th
Preparation meeting (Python basics): July 24, 4-8pm
Submission of the Python mini-project: August 20th
Course dates: 4-7.9, 10-13.9.2023
Deadline for submitting the final project: October 12th