

Digital Twin Bootcamp - Cambridge Edition

22 August - 9 September 2022

WEEK 1 IOT FUNDAMENTALS & ENABLING TECHNOLOGIES							
Time	Monday - 22 aug	Tuesday - 23 aug	Wednesday - 24 aug	Thursday - 25 aug	Friday - 26 aug	Saturday - 27 ago	
09:00 - 11:00	OPENING SESSION 10:00am Welcome coffee 10:30am Opening 10:45-13:00 Presentations: Industry Partners	LECTURE - IoT1 (Prof. Kabla) Programming the microcontroller; Memory; Interrupt	LECTURE - IoT2 (Prof. Kabla) Collecting data from sensors; I2C BUS; temperature sensor; Other sensors for industrial projects (ECG, ...)	LECTURE - IoT3 (Prof. Kabla) Actuators; Heat generator: open and closed loops to control heat production; Project of a controller; Introduction to control theory for systems with feedback.	LECTURE - ET1 (Eng. Petrosino) Blockchain Distributed Ledger Smart Contracts Distributed Apps (DApps)	BUSINESS LECTURE Benchmarking and Business Modelling	
11:00 - 11:30	Break						
11:30 - 13:00	Presentations: Industry Partners	LAB (with Tutor)	LAB (with Tutor)	LAB (with Tutor)	LAB (with Tutor)	BUSINESS LECTURE	
13:00 - 14:30	Lunch						
14:30 - 17:00	TRANSFERABLE SKILLS TRAINING (Dr Story): Self-awareness & Team Working	LAB (with Tutor)	LAB (with Tutor)	LAB (with Tutor)	TRANSFERABLE SKILLS TRAINING Geraint Wyn Story Self-awareness & Team Working	Case-study teamwork	
17:00 - 17:30	Break						
17:30 - 19:00	Case-study teamwork	Case-study teamwork	BUSINESS CASE SOLUTION	Case-study teamwork with Industry Partner Tutor	Case-study teamwork	Case-study teamwork	
WEEK 2 AI FUNDAMENTALS & ENABLING TECHNOLOGIES							
Time	Monday - 29 aug	Tuesday - 30 aug	Wednesday - 31 sept	Thursday - 01 sept	Friday - 02 sept	Saturday - 03 sept	
09:00 - 11:00	LECTURE - AI1 DIGITAL TWIN	LECTURE - AI1 Read and evaluate the data - Descriptive statistics - Data dependencies discovery - Data visualization	LECTURE - AI2 Understand data and make predictions - Unsupervised classification - Supervised classification - Programming classifiers and regressors	LECTURE - AI3 Making wise choices based on data - Neural Networks - Deep and Convolutional Neural Networks models - Reinforcement and Transfer Learning	LECTURE - ET2 Cloud Services for IoT and AI - Cloud Systems for IoT - Cloud Systems for AI - IoT-AI cloud closed loop	Case-study teamwork	
11:00 - 11:30	Break						
11:30 - 13:00	LAB (with Tutor)	LAB (with Tutor)	LAB (with Tutor)	LAB (with Tutor)	LAB (with Tutor)		
13:00 - 14:30	Lunch						
14:30 - 17:00	TRANSFERABLE SKILLS TRAINING Dr Story Project Management & Creativity	LAB (with Tutor)	LAB (with Tutor)	LAB (with Tutor)	TRANSFERABLE SKILLS TRAINING Dr Story Project Management & Creativity		
17:00 - 17:30	Break						
17:30 - 19:00	Case-study teamwork	Case-study teamwork	BUSINESS CASE SOLUTION	Case-study groupwork with Industry Partner Tutor	Case-study teamwork		
WEEK 3 HACKATHON							
Time	Monday - 05 sept	Tuesday - 06 sept	Wednesday - 07 sept	Thursday - 08 sept	Friday - 09 sept		
09:00 - 11:00	LECTURE ETHICS & AI	TRANSFERABLE SKILLS TRAINING Dr Story Presentation Skills	LECTURE (TBC)	TRANSFERABLE SKILLS TRAINING Dr Story Presentation rehearsals and feedback	Case-study teamwork	Group Presentations & Jury Panel	
11:00 - 11:30	Break						
11:30 - 13:00	Case-study teamwork	Case-study teamwork	Case-study teamwork	Case-study teamwork	Case-study teamwork		
13:00 - 14:30	Lunch						
14:30 - 17:00	LAB (with Tutor)	LAB (with Tutor)	LAB (with Tutor)	LAB (with Tutor)	Case-study groupwork with Industry Partner Tutor		
17:00 - 19:00	Case-study teamwork	Case-study teamwork	Case-study teamwork	Case-study groupwork with Industry Partner Tutor			