AI

1st Semester 2023

Course Information

Instructor

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Research Portals:

https://www.researchgate.net/profile/Dennis-Gookyi

https://sites.google.com/view/eisedlab

Class Meeting

Evening Session: Thursday 5:30 PM – 7:30 PM

Textbooks

1. Pete Warden, Daniel Situnayake: *TinyML: Machine Learning with TensorFlow Lite on Arduino and Ultra-Low Power Microcontrollers*
2. Gian Marco Iodice: *TinyML Cookbook*

Course Site

https://github.com/dennisgookyi/AI-Class

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Expected Learning Outcomes

- Learn about a discipline that mixes AI with small devices, such as microcontrollers and sensors, whose main characteristics are ultra-low power consumption, 32-bit CPUs, and a few kilobytes of memory
- Understand the use of AI software platforms including TensorFlow and Edge Impulse to design and deploy models on edge devices

Schedules (The schedule is subject to change)

Lecture	Topic
01	Course Overview
02	Course Hardware and Software Toolchain Setup
03	Introduction to TinyML
04	The Machine Learning Paradigm
05	The Building Blocks of Deep Learning
06	Convolutional Neural Networks
07	Introduction to Edge Impulse Studio
08	Gesture Classification
09	Data Engineering
10	Keyword Spotting
11	Image Classification
12	Responsible AI

Homework

Homework will be posted on the site. Check regularly.

Projects

Projects will be posted on the site. Check regularly.

Useful Links

https://www.tensorflow.org/lite

https://www.edgeimpulse.com/

https://micropython.org/

https://www.adafruit.com/

https://www.arduino.cc/

https://www.st.com/en/microcontrollers-microprocessors/stm32-32-bit-arm-cortex-mcus.html

https://www.espressif.com/en/products/socs/esp32