UNDERGRADUATE/GRADUATE INDEPENDENT STUDY/RESEARCH
University of the Pacific
SCHOOL OF ENGINEERING & COMPUTER SCIENCE

Name:_____   I.D.#_____

Course:___COMP 191_____   Units:___4____   Term:___Fall 2022_____

INSTRUCTIONS: The student must complete this form under the instruction of his/her advisor or the instructor along with the University Individualized Study Request Form. All independent study course work is expected to be completed during the term for which it is registered. Attach additional pages a necessary.
BE VERY CLEAR IN THE EXPECTATIONS – RESULTING REPORT / PROJECT / ETC.

Title:____Deep Learning Images_____

1. TOPIC, or statement of general goal or purpose of study.

The focus of this study is on deep learning algorithms in a hands-on manner, in particular what can be learned from image data using deep neural networks.

2. SPECIFIC OBJECTIVES OF STUDY: What do you expect to accomplish? State objectives in skills to be learned, knowledge achieved, or performance expected.

* *Use PyTorch in deep learning*
* *Tensors and their role in machine learning*
* *Fundamentals of training models and their validation*
* *Fundamentals of neural networks*
* *Convolutional natural networks for image classification*
* *Data augmentation*
* *Image segmentation*

3. STUDY DESIGN AND RESOURCES TO BE USED: Library, test readings, experimentation, laboratory work, activities, etc. How are you going to accomplish your objectives?

Library: PyTorch
Textbook: Deep learning with PyTorch, by E. Stevens, L. Antiga, and T. Viehmann. 2020. Manning.
Activities: Reading assignments, Exercises, Course project

4. METHOD OF EVALUATION: Dates of examinations; due date of term paper report or other written materials; date of critique by instructor or oral report, etc.

Weekly reading assignments: 0% of the grade
Weekly exercises: 40% of the grade
Course project: 60% of the grade (due December 1, 2022)

5. EXPLAIN how the course is intended to apply to your graduation requirements.

This course counts as upper-level COMP elective towards the required units for graduation in Computer Science.

6. IMPORTANCE OF STUDY: How does your proposal contribute to your education and life goals? (If appropriate.)

Machine learning in general, and deep learning in particular, play significant roles in computer and data sciences. This course helps the student to get introduced to the fundamentals of this ever-growing field, and acquire the needed skills to pursue career goals in academia and/or industry.

Student's signature _____   Date_____

Instructor's approval __Sepehr Amir-Mohammadian_____   Date_____
Distribution: Student, Registrars, Advisor