CSC 417/617 DEEP LEARNING IN COMPUTER VISION – COURSE SYLLABUS
(FALL 2021)

- **Credit Hours**: 3 credits

- **Class Hours and Location**: T/Th 9:30 – 10:45 am, Petty 136

- **Instructor**: Dr. Minjeong Kim (mkim@uncg.edu)

- **Office hours**: T/Th 3:30 pm – 4:30 pm, and by appointment (Petty 159)

- **Description**

  This course is designed for graduate and senior undergraduate students in computer science or related disciplines. The goal of this course is to help students understand the fundamentals of machine learning and deep learning theories and techniques, which are highly related to computer vision topics, and experience practical solutions to modern computer vision challenges through assignments/projects. Particularly, the topics covered in this course include several state-of-the-art deep learning architectures, e.g., convolutional neural networks, recursive neural networks and generative adversarial networks, and their extended and improved versions.

- **Outline**: The detailed course schedule will be posted and updated on CANVAS. **Students should check the up-to-date schedule on CANVAS.**

	Topics
1	Introduction
2	Computer Vision/Machine Learning Basics
3	Neural Nets
4	Convolutional Neural Networks
5	CNN Architectures
6	Generative Adversarial Networks
7	Recursive Neural Networks
8	Unsupervised Deep Learning
9	Visualization for Deep Learning
10	Detection
11	Semantic Segmentation
12	Other Computer Vision and Image Analysis Tasks
13	Advanced Deep Learning Topics

- **Materials**

  No textbook is required for this course. The instructor will provide lecture notes which are based on several reference textbooks including the following two books and research articles/resources.

- **Grading**

  Undergraduate Students
  - Assignments (15%), Project (report/source code 10% + presentations 10%), Test 1 (35%), Test 2 (30%)
  - Grading scales

    A: 95-100%, A-: 90-94%, B+: 87-89%, B: 83-86%, B-: 80-82%, C+: 77-79%, C: 73-76%, C-: 70-72%, D+: 67-69%, D: 63-66%, D-: 60-62% F: below 60%

  Graduate Students
  - Assignments (15%), Article presentation (10%), Project (report/source code 10% + presentations 10%), Test 1 (30%), Test 2 (25%)
  - Grading scales

    A: 95-100%, A-: 90-94%, B+: 87-89%, B: 83-86%, B-: 80-82%, C+: 76-79%, C: 70-75%, F: below 70%

- **Class Policies**
  - **Attendance**: Students are required to attend all classes. Accumulated absences more than 30% of total class hours without preapproval, it may lead to failure in the course. Even if the absence has been excused, the rules on Due Dates and Missed Exams are followed.
  - **Due Dates**: Late assignments will be penalized 20 percent per day (per 24 hours).
  - **Missed Exams**: Make-up exams are not generally arranged unless emergency approved by the instructor. Only if the student's absence is approved, it will be scheduled by the instructor.
  - **Academic Integrity**: All work including assignments and exams is subject to the UNCG Academic Integrity Policy (https://osrr.uncg.edu/academic-integrity/). By submitting their assignments and exams, students are implicitly agreeing to this policy. Academic dishonesty is not acceptable and is subject to official sanctions. That is, the incident(s) will be reported to the department and it may result in zero point to the work and even failure in the course.
  - **Academic Accommodations**: If you have disability-related requirements, please contact the Office of Accessibility Resources and Services (OARS) at https://ods.uncg.edu/.
  - **Health and Wellness**: Student Health Services and The Counseling Center (https://shs.uncg.edu/) can help with health and wellness issues you may be experiencing (e.g., physical ailments, illnesses, strained relationships, anxiety, high levels of stress, alcohol/drug problems, feeling down, or loss of motivation).
  - **Emergency University Closure**: Our course schedule follows the university's instructions in case of emergency such as bad weather.
  - **Disruptive Behavior**: Upon any non-course-related or disruptive activities, the instructor may ask the student to leave the classroom and count it as absence. If such behavior is continued, it may result in dropping the student from the course based on the UNCG Disruptive Behavior Policy (https://osrr.uncg.edu/faculty/disruptive-behavior/)

- **Copyright**: The course materials including lectures are provided only for this course. Redistribution of them is not recommended. Any commercial gain by such behavior is a violation of the University's Copyright Policy and of the Student Code of Conduct.
- **COVID-19 exemptions**: If you are directly or indirectly affected by Covid-19, including positive test, symptom, or quarantine, contact instructor.

- **COVID-19 Statement**
  - **Instructor and students follow the campus-wide safety rules, including**
    - Following face-covering guidelines
    - Engaging in proper hand-washing hygiene when possible
    - Self-monitoring for symptoms of COVID-19
    - Staying home if you are ill
    - Complying with directions from health care providers or public health officials to quarantine or isolate if ill or exposed to someone who is ill.

  - **Seat assignment**: Students must sit in their assigned seats at every class meeting and must not move furniture. Students should not eat or drink during class time.

  - **Mask requirement**: Students who do not follow masking requirements will be asked to put on a face covering or leave the classroom to retrieve one and only return when they follow the basic requirements.

  - Repeated face covering issues may result in conduct action. The course policies regarding attendance and academics remain in effect for partial or full absence from class due to lack of adherence with face covering and other requirements.

  - If accommodations regarding wearing face coverings are needed, students may contact the Office of Accessibility Resources and Services (OARS) at https://ods.uncg.edu/, in consultation with Student Health Services, will review requests for accommodations.

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