



Sungkyunkwan University (SKKU) International Summer Semester (ISS) 2021

AI for Social Innovation

Prof. Jeong-Woo Koo, Sungkyunkwan University (jkoo@skku.edu)

SHORT COURSE DESCRIPTION

How can AI technologies be used as a force for social good while minimizing the potential for misuse or bias? We will address this question by considering a myriad of ways in which AI technologies lead to both positive and negative social consequences. We first consider a human-centered approach to AI and the rise of the AI for Social Good Movement and then review targeted applications of AI to the domain of social good, followed by the discussion of ethical, technical, rights-related challenges facing the advances in AI. Students will learn about how social sciences can stimulate computer science and vice-versa and grab the opportunity to imagine creatively how the advances in AI can usher in the principles of inclusiveness, fairness, and accountability.

READING MATERIALS

PDF files of all readings will be available 1 to 2 weeks prior to the start of the ISS

COURSE REQUIREMENTS AND GRADING

All ISS classes are pass/fail based on the student academic achievement evaluated by grades on a scale of 100 points (grade of 60 or above is Pass). SKKU regulations require students to attend at least 80% of all classes.

Attendance: 10%

Class participation: 20%

Team presentation (one time): 15%

Team project: 15%

Final take home exam: 30%

memo: 10% (one time)

Preferred Style for Memo

Beginning with 2 pages summary, proceeding with 1 page review, and ending with two thought-provoking questions (11 font, Times-New Roman, and default margins in MS Word). Plagiarism-free writing requirement.

Other Logistics

- comfort with the basic level of Python or some other programing experience is encouraged, but not required.
- Students are expected to work with other classmates for preparing one time presentation and turning it to a team project output.
- Team project needs to be problem solving oriented using AI techniques. It would be like a proposal containing clear ideas and action plan or an actual set of coding or program.
- A study guideline containing candidate questions will be provided prior to the 24 hours take home exam.

COURSE SCHEDULE

– WEEK I: Human Centered Approach to AI –

Thursday (24 June):

Course Introduction and Logistics

Friday (25 June)

Human Centered Approach to AI: Concepts, and Initiatives

– WEEK II: Human and Social Augmentation –

Monday (28 June):

AI in Health Care: Examples of human augmentation

Tuesday (29 June):

AI and Welfare Services: promises and limits

Wednesday (30 June):

AI and Social bots: From empathy bots to open domain chat bots

Thursday (1 July):

Machine Learning-Based Solutions in Nonprofits and Social Enterprise

– WEEK III: Machine Learning in Social Sciences –

Monday (5 July):

Use of Machine Learning in Social Science Research: Various Examples

Tuesday (6 July):

Using Twitter API for Social Studies: Text and Network Analyses

Wednesday (7 July):

Topic Models in Social Studies: Text analysis of World Bank reports and online print media

Thursday (8 July):

Decision Tree and Random Forest: Predicting Human Rights Sensitivity

– WEEK IV: Ethical and Human Rights Issues–

Monday (12 July)

Moral Machine Experiments: The ethics of Self-Driving Cars

Tuesday (13 July)

Digital Inequalities: Access to Information, Opportunities, and Gender

Wednesday (14 July)

Inclusive, Fair, and Accountable AI: From OECD initiatives to local initiatives

Thursday (15 July)

Final take home exam