



Course ID and Title: ISE-613 / CSCI-613 Seminar in Operations Research and Artificial Intelligence

Units: 1 Unit

Term—Day—Time: 50 minutes once per week

Location: TBD

Instructors: Phebe Vayanos

Office: OHE 310L

Office Hours: TBD

Contact Info: TBD

Catalogue Description

Current research, guest speakers in the field; review papers; guidance in preparing research proposals and special projects. Open only to those admitted to the ORAI certificate program.

Learning Objectives

The ORAI Seminar series is a required component of the ORAI Interdisciplinary PhD program in Artificial Intelligence (AI) and Operations Research (OR). The seminar will be held once a week during one semester each year. All students who are enrolled in the program will need to register for the seminar at least once. The seminar will involve a mix of:

1. Student presentations of cutting-edge papers at the interface of AI/OR
2. Presentations (often virtual) from leading researchers in interdisciplinary research in AI/OR
3. 5 workshops on each of the following topics:
 - a. Team building
 - b. Ethics in AI/OR
 - c. Advanced training on human subjects (beyond just Citi training)
 - d. Entrepreneurship
 - e. Interdisciplinary research

The seminar will complement in various ways the training that the students will receive in their courses by teaching them complementary skills. By the end of the course, students will be able to:

1. Describe cutting-edge research and open problems at the interface of AI and OR and using terminology and language from both fields
2. Be comfortable interacting with leading researchers in AI, OR, and their interface
3. Ethically and responsibly work in teams to engage in possible deployment and commercialization of technologies that integrate OR and AI to address problems that cannot currently be solved by any one discipline in isolation.

Such skills are an important part of their training and an important component of any NSF National Research Traineeship program such as the one that supports the creation of the ORAI program (see here:

https://www.nsf.gov/awardsearch/showAward?AWD_ID=2346058&HistoricalAwards=false)

Seminar Notes

The seminar is Credit/No Credit. Optional readings will be posted to Brightspace. We will use Slack for Q&A and open discussions among students as well as Instructor and TA (if applicable).

The seminar will provide many opportunities for interactions with other students, the instructors, and the TA (if applicable).

Optional Readings and Supplementary Materials

All readings can be downloaded from the USC libraries websites, available online for free download, or will be posted on Brightspace.

Course Schedule (tentative): *[more detailed schedule will be provided closer to the class start date]*

Weeks 1-7: Guest presentations with topics changing annually as needed to suit the current topics in the field. These presentations will serve to set the tone for subsequent student presentations.

Weeks 8-15: Alternating weeks of student presentations and workshops.

Outside Class Work:

- During the weeks when we have a guest lecture, read the paper(s) presented by the speaker
- During the weeks when students are presenting, provide anonymous feedback to your peers to help them improve the quality of their presentations/research
- During the weeks when we have a workshop, read any assigned preparatory readings

Credit/Grading

To get credit for the course, students must:

- Attend all but 2 of the lectures

- Give at least 1 presentation and the topic of the presentation could be a review of a current paper or a presentation of your own actual or proposed PhD research (presentations will not be formally evaluated; instead they are an opportunity to practice presentation skills and get feedback from your peers); the exact number of presentations needed will depend on the number of students registered for the course.
- Give anonymous feedback to your peers on the presentation they gave. The feedback will use an instructor-devised form which includes multiple-choice questions, open-ended questions, and/or free-form observations. Feedback will have no effect on the grade of the students who made the presentations. Rather the feedback submitted by one student about other students' presentations will be used to determine the grade of the student who submitted the feedback. Specifically, to get credit for giving feedback, you must submit feedback on at least 2 presentations.

Academic Integrity for this Class

Unless otherwise noted, this course will follow the expectations for academic integrity as stated in the [USC Student Handbook](#). The general USC guidelines on Academic Integrity and Course Content Distribution are provided later in this syllabus.

Please ask the instructor [and/or TA(s)] if you are unsure about what constitutes unauthorized assistance on an exam or assignment, or what information requires citation and/or attribution.

Class Recordings and Course Content Distribution: You may not record this class without the express permission of the instructor and all other students in the class. Distribution of any notes, recordings, exams, or other materials from a university class or lectures — other than for individual or class group study — is prohibited without the express permission of the instructor; violations will be considered an intentional act to facilitate or enable academic dishonesty and reported to the university.

Use of Generative AI in this Course

Generative AI permitted but limited as follows: In this course, you are permitted to use Generative Artificial intelligence (AI)-powered programs to help you, but only on assignments that explicitly indicate a permitted use of Generative AI. However:

- You should also be aware that AI text generation tools may present incorrect information, biased responses, and incomplete analyses; thus, their answers may not meet the standards of this course.
- To adhere to our university values, you must cite any AI-generated material (e.g., text, images, and other content) included or referenced in your work and provide the prompts used to generate the content. Using an AI tool to generate content without proper attribution will be treated as plagiarism and reported to the Office of Academic Integrity.

Please review the instructions in each assignment for more details on how and when to use AI Generators for your submissions.

Academic Integrity

The University of Southern California is foremost a learning community committed to fostering successful scholars and researchers dedicated to the pursuit of knowledge and the transmission of ideas. Academic misconduct — which includes any act of dishonesty in the production or submission of academic work (either in draft or final form) — is in contrast to the university's mission to educate students through a broad array of academic, professional, and extracurricular programs.

This course will follow the expectations for academic integrity as stated in the [USC Student Handbook](#). All students are expected to submit assignments that are their own original work and prepared specifically for this course and section in this academic term. You may not submit work written by others or “recycle” work prepared for other courses without obtaining written permission from the instructor(s). Students suspected of engaging in academic misconduct will be reported to the Office of Academic Integrity.

Other violations of academic misconduct include, but are not limited to, cheating, plagiarism, fabrication (e.g., falsifying data), knowingly assisting others in acts of academic dishonesty, and any act that gains or is intended to gain an unfair academic advantage.

Academic dishonesty has a far-reaching impact and is considered a serious offense against the university. Violations will result in a grade penalty, such as a failing grade on the assignment or in the course, and disciplinary action from the university itself, such as suspension or even expulsion.

For more information about academic integrity see the [student handbook](#) or the [Office of Academic Integrity's website](#), and university policies on [Research and Scholarship Misconduct](#).

Please ask your instructor if you are unsure what constitutes unauthorized assistance on an exam or assignment or what information requires citation and/or attribution.

Course Content Distribution and Synchronous Session Recordings Policies

USC has policies that prohibit recording and distribution of any synchronous and asynchronous course content outside of the learning environment.

Recording a university class without the express permission of the instructor and announcement to the class, or unless conducted pursuant to an Office of Student Accessibility Services (OSAS) accommodation. Recording can inhibit free discussion in the future, and thus infringe on the academic freedom of other students as well as the instructor. ([Living our Unifying Values: The USC Student Handbook](#), page 13).

Distribution or use of notes, recordings, exams, or other intellectual property, based on university classes or lectures without the express permission of the instructor for purposes other than individual or group study. This includes but is not limited to providing materials for distribution by services publishing course

materials. This restriction on unauthorized use also applies to all information, which had been distributed to students or in any way had been displayed for use in relation to the class, whether obtained in class, via email, on the internet, or via any other media. Distributing course material without the instructor's permission will be presumed to be an intentional act to facilitate or enable academic dishonesty and is strictly prohibited. ([Living our Unifying Values: The USC Student Handbook](#), page 13).
Statement on University Academic and Support Systems

Students and Disability Accommodations:

USC welcomes students with disabilities into all of the University's educational programs. [The Office of Student Accessibility Services](#) (OSAS) is responsible for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a student has completed the OSAS process (registration, initial appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a Letter of Accommodation (LOA) will be available to generate for each course. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at osas.usc.edu. You may contact OSAS at (213) 740-0776 or via email at osasfrontdesk@usc.edu.

Student Financial Aid and Satisfactory Academic Progress:

To be eligible for certain kinds of financial aid, students are required to maintain Satisfactory Academic Progress (SAP) toward their degree objectives. Visit the [Financial Aid Office webpage](#) for [undergraduate](#)- and [graduate-level](#) SAP eligibility requirements and the appeals process.

Support Systems:

[Counseling and Mental Health](#) - (213) 740-9355 – 24/7 on call

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

[988 Suicide and Crisis Lifeline](#) - 988 for both calls and text messages – 24/7 on call

The 988 Suicide and Crisis Lifeline (formerly known as the National Suicide Prevention Lifeline) provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week, across the United States. The Lifeline consists of a national network of over 200 local crisis centers, combining custom local care and resources with national standards and best practices. The new, shorter phone number makes it easier for people to remember and access mental health crisis services (though the previous 1 (800) 273-8255 number will continue to function indefinitely) and represents a continued commitment to those in crisis.

[Relationship and Sexual Violence Prevention Services \(RSVP\)](#) - (213) 740-9355(WELL) – 24/7 on call

Free and confidential therapy services, workshops, and training for situations related to gender- and power-based harm (including sexual assault, intimate partner violence, and stalking).

[Office for Equity, Equal Opportunity, and Title IX \(EEO-TIX\)](#) - (213) 740-5086

Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

[Reporting Incidents of Bias or Harassment](#) - (213) 740-2500

Avenue to report incidents of bias, hate crimes, and microaggressions to the Office for Equity, Equal Opportunity, and Title for appropriate investigation, supportive measures, and response.

[The Office of Student Accessibility Services \(OSAS\)](#) - (213) 740-0776

OSAS ensures equal access for students with disabilities through providing academic accommodations and auxiliary aids in accordance with federal laws and university policy.

[USC Campus Support and Intervention](#) - (213) 740-0411

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

[Diversity, Equity and Inclusion](#) - (213) 740-2101

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

[USC Emergency](#) - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

[USC Department of Public Safety](#) - UPC: (213) 740-6000, HSC: (323) 442-1200 – 24/7 on call

Non-emergency assistance or information.

[Office of the Ombuds](#) - (213) 821-9556 (UPC) / (323) 442-0382 (HSC)

A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.

[Occupational Therapy Faculty Practice](#) - (323) 442-2850 or otfp@med.usc.edu

Confidential Lifestyle Redesign services for USC students to support health-promoting habits and routines that enhance quality of life and academic performance.