University of Florida
College of Journalism and Communications

Human-Machine Communication
MMC 6936 Section 6HMC Class #22211 – Fall 2021
Tuesday 5:10-8:10
Location: Weimer 3024

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<u>Office Hours</u>: Monday 4:00-5:00 or by appointment

COURSE DESCRIPTION
Human-machine communication (HMC) involves communication with digital interlocutors including embodied machine communicators, virtual/artificially intelligent agents, and technologically augmented persons, either in real or augmented environments. HMC is an area of study that investigates the creation of meanings among humans and machines. Throughout the semester, we will first look at how "machine" has been conceptualized, along with its relationship to emerging technologies. We will then move to topics such as affordances, user interface and user experience design, and social construction of technology. We will also situate our discussion in the historical context and examine the academic debates on human-computer interaction and human-robot interaction. Then we will cover a few perspectives on computing, which includes but are not limited to social computing, affective computing, and ubiquitous computing. This course is a <u>seminar-based</u> course.

COURSE GOALS
The objective of this course is to prepare students for advanced research on the social and psychological aspects of human-machine communication. I envision this course to be a highly participatory one. In addition to completing readings and participating in discussions, students will do research, individually or in groups, applying theories to an emerging technology or some feature or process found in the social world of emerging technologies. During the semester, students will be responsible for making regular presentations on assigned readings and on their research ideas.

Required Readings:
All readings including links to online sources will be available on Canvas (elearning.ufl.edu).

Recommended readings:
1. Rogers, Y. (2012). *HCI theory: Classical, modern, and contemporary.* Morgan & Claypool.
2. Guzman, A. L. (2018). *Human-machine communication: Rethinking communication, technology, and ourselves.* New York, NY: Peter Lang.

3. Booth, W. C., Colomb, G. G., Williams, J. M., Bizup, J., & Fitzgerald, W. T. (2016). *The craft of research.* The University of Chicago Press.

Outcomes Assessment:
Class discussion and participation: 15%
Discussion leading (twice): 2X5% = 10%
AI-based media observation: 3X5% = 15%
The future of media exercise: 10%
Group paper on HMC: 20%
Final paper and presentation: 30%

Grading Criteria:
A = an earned grade that represents outstanding and exceptional work; <u>keep working and submit to conferences/journals</u>
B = an earned grade indicating competent, above average work; <u>need some conceptual modification for conference submission and journal submission</u>
C = an earned grade for work that is average and/or merely fulfills the basics of the assignment and lacks some important connection to the course material; <u>need a thorough revision to enhance the work.</u>
F = an earned failing grade for late work, poorly executed work, plagiarism or other failure to adhere to the requirements of academic integrity.

ASSIGNMENTS

Class discussion and participation

- Students are expected to come to class with having thoroughly read the assigned articles and chapters. The goal of any advanced Ph.D. course is first to understand the concepts outlined in the readings, but more importantly students should be able to use these works to think with and apply. This is a graduate seminar, so most of the course will be discussing and dissecting the readings. Please notice that class participation is different from class attendance. Share your questions/comments/ideas in (and out of) class; get involved; turn things in on time. If you don't engage in class discussion, your participation grade will be low.
- Leave your week questions on a Google Doc. Share anything that's related to our class discussion.

Discussion leading

- To facilitate understanding of the readings, we are going to have a rotating group of students lead discussion on each week's readings. Each student will engage in discussion leading twice throughout the semester. Students in charge of the weekly leading class

discussion for that week should <u>bring a discussion sheet with prompts and discussion questions</u> into our class.

- Discussion leaders should select two weeks for their discussion leading. "Talk us through it" during the class discussion.

Group paper on HMC

- We are going to write a paper, hopefully suitable for submission to a conference, or at least a pre- or post- conference. We will start from an existing dataset and discuss the potential topics together. This assignment requires students to be voracious readers, get familiar with a specific area in the HMC literature, and then contribute to this intellectually challenging project. We will allocate about 30 minutes each class to discuss the progress of the project starting the second week. The group project will ask you to work on your own sections as well as help coordinate the whole piece.

AI-based Media Observation

- This assignment provides you with a real-world experience of conducting exploratory observation research and field studies. It requires you to go into the 'field' to observe the communication behaviors of individuals and to develop tentative research questions for a further examination of the phenomena you observe.
- This assignment requires you to pick a particular AI-based media that you use in your life and observe/write down anything that interests you regarding your observation results. For example, you may pick smart speakers and keep observing how your in-depth interaction with them renders anything that you were not aware of. You may also track the use of a mobile app and analyze how the interface design affects you. The media you observe does not need to be your home-owned devices. You may walk into an Apple store and observe people's use. You may stay in Starbucks and track people's behavior.
- Pay attention to details: Where and when did you do the observation, and why did you make these choices? During the observation what was the place like (how many people were around, was it large and open or small and tight, was it loud or quiet, was there music and/or talking, where were you positioned, did you switch locations, etc.)? How obtrusive was your observation (were you noticed, did your presence affect those you were observing, etc.)? What did it feel like to be observing (were you able to pay attention to what you felt you needed to, did you worry you'd be identified watching people, etc.)?
- You may describe some of the most important and relevant characteristics of the people /behaviors/machines/technologies/contexts you observed. Some of these may involve single attributes or variables and others may involve relationships between two or more attributes or variables. How clear did the patterns seem and evolve? What aspects of the situation and the people involved might have caused these patterns or might cause deviations from them?
- State a research question that arose from the observation session. Explain why it would be worthwhile to conduct an investigation of this question. Your research question may lead to your second and third media observation themes. That means your observation

should be revolved around the same topic. Write a summary and interpretation of your observations (approximately 2 pages long, double-spaced using standard fonts and 1 inch margins).

Future of Media Exercise

- This assignment gives you the opportunity to use the information you've learned this semester about psychological processing and media, along with your own creativity and imagination, to predict what the media (and how we use them) will be like in the future.
- Think about how the form and content of today's media have evolved (e.g., early television sets were large pieces of wooden furniture with a small, blurry, nearly oval-shaped, black and white display; and without videotape only live programs, based on radio shows of the era, were available on the few channels that were broadcasting; all of this is different today).
- Think about what you've read, discussed, and done (e.g., in the other assignments) in this course. Look back at the fundamental concepts we covered first, the research and theory about elements of the human information processing system (attention, memory, emotion, judgment/decision-making, and behavior) and the specific types of media processing we examined (presence in new and old media, etc.).
- Use all of this information and your own imagination to predict how the media of today are likely to evolve over the next 20 years. What will the form and content of television, radio, newspapers, books, magazines, films, computers, online social media, and virtual and augmented reality be like in the year 2040? Will they even exist? You can focus on as few as two media or as many as you can think of (including those not in this list), but be sure to specifically use the information from steps 1 and 2 above when you develop your predictions (i.e., you must "back up" your prediction with information from this course, and, if you like, other sources).
- Now write an approximately 3-page (typed, double-spaced) paper describing your predictions and providing your reasoning for each one, What do you predict the form and content of media will be like, and why? Be sure to use in-text citations and end-of-paper references to properly identify your sources. Conclude the paper with your reactions to this exercise.

Final research paper

- Write a full research paper/proposal related to any human-machine communication topics. Please note that a research paper does not exclusively mean an empirical study. You can choose to write a conceptual/topic paper if you want. The full paper should be about 15-25 pages including references, tables, and figures. If you are working on a research proposal, it should be about 10-14 pages long including introduction, literature review, hypotheses/research questions, methods, and references. Use APA format. You can take any approach to your study (e.g., quant, qual, critical, etc.). If you choose to write a research proposal, treat it as an extended abstract. That means you should imagine your final paper as a final product that can be submitted to a conference.
- You can choose to coauthor with classmates. But in that case, you should submit a full research paper or a topic paper. You can only collaborate with at most 2 classmates (i.e.,

three authors in total). If you have taken my other classes where you proposed a study, you can continue to work on that (e.g., start data collection) and finish a full paper.
- Here is a general guideline about an empirical study-based research paper. Purpose and rational of the study
  - Literature review: What needs to be investigated? What research gap existed in prior research? What is the logic of your proposed hypotheses and RQs?
  - Hypotheses and research questions
  - Research methods: Include sample, procedures, measures, data analysis, etc.
  - Discussion (for a full research paper): What do the results mean? What can you conclude based on results? What theoretical contribution is there?

COURSE POLICIES

Classroom Etiquette
- The class does not tolerate harassment. Harassment consists of abusive, implicit or explicit behavior directed toward an individual or group because of race, ethnicity, ancestry, national origin, religion, gender, sexual orientation, age, physical or mental disability, including learning disability, mental retardation and past/present history of a mental disorder.
- Act professional when contacting the instructor. For example, emails should include subjects. Put the course name in the subject line. Do not expect an immediate answer to email questions. I try best to reply within 48 hours.
- While I try to be as responsive as possible via email, please keep a few things in mind: 1) Professors can receive dozens of work related emails a day, so always consider the reason you are emailing, and think about if there is another place you can find that information or if you can ask a classmate. 2) Be as clear as possible in your request, not something like 'I didn't understand the readings, can you explain.' – ideally this is what the class discussion is for 3) Try to be respectful and understanding about the time that you send requests and the response time – Professors, like students, are very busy, and we all have different hours that we allot for work.

Academic Honesty/Policy on Plagiarism
- Honesty is expected in all assignments, exams, and presentations. All writing submitted to this course must be your original work. Use the American Psychological Association (APA) citation format including quoting and paraphrasing in your writing. Plagiarism is the most extreme form of academic dishonesty and will result in failing this course and possible removal from the university. Plagiarism includes cheating on assigned work, submitting the same paper for two courses, buying papers, turning in someone else's work for your own use.
- Plagiarism is something that is a zero-tolerance policy for me. As a student at an institution of higher learning, by misrepresenting your work and your capabilities, that is academic fraud, and your degree is invalid. Cheating is a learned behavior, and I believe if you are caught you need to be punished to prevent it from happening again. If you are not, that only teaches you that it is acceptable and will continue, which then becomes a reflection on us and a failure of our faculty. I also understand that there may be different

academic standards internationally, but this is the university policy on academic integrity. A complete UF student honor code is available here: https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/

Grade Appeals
- If a student believes he/she have legitimate grounds on which to dispute a grade on a particular assignment, the student may submit a formal written appeal (email is ok) to the instructor within 10 days of receiving the original grade. The appeal must provide rationale for why the current grade is inaccurate. Feelings are not criteria. Once the student has submitted a formal grade appeal and all the supporting evidence including the graded copy of the assignment in question, the instructor will carefully examine the assignment and provide a new grade. Once the instructor has entered the final grade to the university system, that grade will not be changed under any circumstances.

Accommodations for Special Needs:
Any student who has a need for accommodation based on the impact of a documented Disability, including special accommodations for access to technology resources and electronic instructional materials required for the course, should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Please contact me to discuss the specific situation by the end of the second week of classes or as soon as practical.

Course Evaluations
Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/."

Tentative Course Schedule

Week	Date	Topic	Notes
1	8/24	Course introduction	
2	8/31	Conceptualizing Emerging Technologies	
3	9/7	What is Human-Machine Communication?	Guest lecture
4	9/14	Computers are Social Actors	Future of media exercise due
5	9/21	Conceptualizing Affordances	
6	9/28	Design examples + Group Paper Discussion	AI observation #1 due
7	10/5	Conceptualizing and Measuring Machine Heuristic	
8	10/12	Human-Computer Interaction	
9	10/19	Artifacts, Politics, and Actor-Network	
10	10/26	Science and Technology Studies (STS)	AI observation #2 due
11	11/2	Science and Technology Studies 2 (TBD)	Group paper due
12	11/9	Ubiquitous and Persuasive Computing	
13	11/16	Introduction to Machine Learning	
14	11/23	Writing Papers and Q&A	
15	11/30	Final Paper Presentation	AI observation #3 due
16	12/7	Final Paper Due	Final paper due

Note: Changes that occur to the syllabus will be announced in class or on Canvas.