COMM 103S: Digital Media and Personalization
Summer 2023, Stanford University

Course Details
Units: 3
Schedule: WF 12:00 PM – 1:50 PM (in-person only)
Room: Building 420-041
Instructor: Sumer Vaid (sumer@stanford.edu)
TA: Hana Tadesse (she/her) - hanat18@stanford.edu

Course Description
The rise of personalization technologies has disrupted domains ranging from political campaigns to fashion with reverberating societal consequences. People who use digital media platforms leave behind a data trail that can be used to peer into their minds and make inferences about their psychological characteristics. These inferred psychological characteristics, in-turn, can be used to dynamically customize messages to individual users at a granular scale. Personalization technologies operate with the goal of maximizing persuasive appeal of messages by creating a psychological fit between mediated content, the characteristics of individual users and the context(s) in which people are receiving the message. In this course, we will examine (1) the basic psychological mechanisms underlying personalization technologies, (2) the role played by big data and machine learning techniques in facilitating persuasion and (3) the ethical issues associated with the rise of modern-day personalization technologies. By combining a big data lens with socio-cognitive psychological research, we will understand how, why and when personalization technologies work. We will pay close attention to generative artificial intelligence technologies like ChatGPT and DALL-E in the context of facilitating persuasion. We will also spend time formulating the future of persuasion technologies while considering the broader societal repercussions that might originate from their continued widespread adoption.

Instructor Bio
Sumer's research explores how digital media technologies can be used to study and alter psychological processes and outcomes, specifically persuasion and wellbeing. He is especially interested in a person-specific, computational and idiographic approach that examines the extent to which individual differ from each other in their response to different kinds of media. Sumer uses a variety of computational methods ranging from machine learning to dynamic structural equation modeling to inferential statistics. He is especially interested in examining dynamics between digital media use and psychological states in diverse regions of the world where technology use is growing the fastest. He is also interested in ethical and philosophical issues concerning the mind, communication processes and scientific methodology more broadly.

Hana is a co-terminal student in Management, Science, & Engineering (MS&E). For undergrad, Hana majored in Computer Science (HCI track) and minored in COMM. After graduation, she is interested in pursuing a PM role in the tech industry. Her other on-campus commitments involve being a part of the Stanford Ethiopian & Eritrean Student Association, and a former BOSP ambassador for Cape Town. In her spare time, Hana loves talking about her dog, Loza, and enjoys anything outdoors: hiking, running, longboards, etc.

Student Resumes and Bios

We would like to have a one-page resume (or any type of bio) from every student in the class. In addition to helping with us get to know you, we will use them during conversations with panelists assigned to the topic each day (see following section on Class Panels). *Submitting a resume is a requirement of the course*. Use any format you like and feel free to just send whatever you already have completed. A single page is plenty. We'd love to know about majors, home towns, work, internships, organizations, sports, hobbies, travel – whatever you think interesting or important.

Office Hours
Sumer will announce weekly office hours in the first week of the class. To set-up a time to meet with him 1-on-1, email him at sumer@stanford.edu.
Hana's office hours are Tuesday's 9am-10am.

Lab Session
Each day of class, we will split our 2-hour window into (1) a lecture component and (2) a lab component. For the first hour, I will lecture about class material and the readings for that week, taking questions as I go. Then, during the second hour we will perform collaborative labs that will involve discussing and applying ideas with other students in the class. During the last 20 minutes of class, we will reconvene and each group will summarize their discussions to the rest of the class. For the labs, we will break up into small groups, different sizes for different Labs. Lab participation is required. Attendance will be taken. Students are allowed to miss 1 lab without any penalty. Participation for each student will be assessed as "Great (2 pts)", "Good (1 pts)" or "No Credit (0 pts)" for each lab.

Readings
All readings are available online on Canvas. Most of the readings will be previewed during the lectures, some not. We look forward to discussing the readings during the weekly class. Give us your point of view. Ask questions!

Writing Project
Everyone will complete one class writing project, worth 25% of the final grade. For the project, you will select a topic related to digital media and personalization. The syllabus topics are good candidates for project topics, but you may also find others. The goal of the project is to use evidence from media psychology to present a point of view about your chosen topic.

You may select one of three writing formats for the project: (1) an Op/Ed article (*a la* the *New York Times*, *Washington Post* or *Wall Street Journal*), (2) a policy memo for a policy maker who may be considering a media and technology issue or (3) a TED-style talk complete with a slide deck and a written narrative that you would use with the slides. Some good TED talks about media can be found here:
TED talks on social media: https://www.ted.com/talks?topics%5B%5D=social+media
TED talks on media and technology: https://www.ted.com/search?q=media+technology

The word limit is the same for each of the formats (~1,000 words). The papers are due by 5 pm on August 16. Papers will be graded based on use of media psychology to formulate a point of view, clarity of issue statements and writing, accuracy of statements, and argument about the importance of the issue you discuss.

Exams
There will be two exams during the term (noted in class schedule below), one for each half of the class. The exam will include several multiple-choice questions and will test the material presented during class lectures and assigned readings. Each exam should take approximately one hour to complete. You may take the exam at any time during a 12-hour window on exam day by following the exam instructions posted on Canvas. You must complete the exam at some time during the allotted time window on the scheduled day for the exam.

Course Grading
The final grade for the course will be calculated based on your grades on two multiple-choice exams (40%, evenly split between the two exams), writing project (25%), participation in labs (25%), submission of a one-page resume (5%) and research participation (5%).

Grades will be based on the following cutoffs. Students can see their total % at any point on Canvas under the Grades section:

A	94 - 100%
A-	90-93%
B+	87-89%
B	84-86%
B-	80-83%
C+	77-79%
C	74-76%
C-	70-73%
D	60-69%
F	below 60 %

Students can request regrades twice through the entire course. If a regrade is successful (if the grade is increased), students retain the regrade request. If a regrade is unsuccessful (if the grade is not changed or decreased), that regrade request cannot be used again.

Extra Credit / SONA Participation
Participate in research credits for a total of 3% extra credit. Students will receive an email from the SONA management system on Friday (June 30th) with their log-in credentials. They can then access studies that offer between 0.5-3.00 credits. Based on the credits earned, students will receive 0.5% - 3% credits.

Alternative to study participation is completion of 3 paper summaries to earn extra credit.
Find 3 interesting empirical papers on digital media and personalization. Summarize them in 300 words. Submit on Canvas before Exam #2

Honor Code
Here is a link to the Honor Code that will be used in the course:
https://communitystandards.stanford.edu/policies-and-guidance/honor-code

Well-Being, Stress Management, and Mental Health Resources
The COVID-19 pandemic is a stressful time for us all and may be challenging for mental health. If you or someone you know is feeling overwhelmed, depressed, or is in need of support, services and support are available to help. We have highlighted three options.
Note: All the below resources are free.

1. Counseling and Psychological Services (CAPS): CAPS is the university's counseling center dedicated to student mental health and well-being. CAPS provides a broad range of services including crisis counseling, individual therapy, medication assessment and management, and group therapy. They also offer 24/7 immediate mental health crisis assistance at 650-723-3795.Please note that CAPS services are currently only available via TeleHealth to students who are in-stat e due to legal restrictions . If you are out-of-state, you can call 650-723-3785 24/7 for a consultation on how to best support your needs, including finding referrals to counselors in your area. You can make an appointment at https://vaden.stanford.edu/caps and through the Vaden Student Portal: https://vaden.stanford.edu/make-appointment.
2. The Bridge Peer Counseling Center: The Bridge provides anonymous, confidential, and online peer counseling sessions with trained student counselors. In addition to providing emotional support, they can help you navigate other Stanford resources. They are available via Zoom
    during the academic school year. To connect to the Bridge or find out more, see the instructions on their website https://web.stanford.edu/group/bridge/ .
3. Well-Being Coaches at Stanford: Well-being coaches are available to offer support when you are struggling and can support your holistic wellness. To schedule an appointment, visit this website to find a coach who best suits your needs and look for available times in their schedule: https://vaden.stanford.edu/well-being/coaching.

Students with Disabilities
Students with disabilities that need accommodations in this class are encouraged to contact the Office of Accessible Education (OED) as soon as possible (i.e., during the first week of classes, barring extenuating circumstances that prohibit this) to ensure that such accommodations are implemented in a timely fashion. In general and to ensure fairness to all students, the instructors will not make accommodations for disabilities without documentation from the OED office.

Academic Resources
Writing and oral communication support: You can schedule free one-to-one sessions at the

Hume Center for Writing & Speaking to work with trained writing consultants. They are available to help students brainstorm and get started on assignments; learn strategies for revising, editing, and proofreading; and improve organization, flow, and argumentation. You can make an appointment with a lecturer / advanced graduate student consultant, or drop-in to meet an undergraduate peer tutor. For further information about hours and locations, or to schedule an appointment, visit these sites:

Hume website at: http://hume.stanford.edu
Academic skills coaching: Academic Coaches are available through the Stanford Learning *Program* to work with students to tackle challenges such as time management, procrastination, motivation, exam preparation and anxiety, reading and note-taking strategies, and communicating effectively. You can find more information and book an appointment here: https://studentlearning.stanford.edu/academic-skills/academic-coaching#undergradfaqs

Technology Resources
The Lathrop Tech Desk offers free loaner laptops and other tech equipment to any actively enrolled students. Shipping is available for off-campus students, depending on academic need. For more information, see their website: https://thehub.stanford.edu/check-out-equipment-and-laptops. Free and Low-Cost Internet Access: The Hub at Lathrop has compiled a list of low-cost and free internet providers. You can find more information here: https://thehub.stanford.edu/get-help-with-home-internet-access For more available resources, you can visit this list compiled by Stanford students from the Basic Needs Coalition.

Schedule
Required readings are in **bold.** Material from required readings can be expected on the exams. Optional readings are in *italics.* It is expected that students will incorporate material from optional readings into their writing project. All readings will be made available on Canvas.

Week 1: Introductions, Definitions & Frameworks

June 28: Introduction to Personalization

Quick introduction and presentation of bio and resumes by each student in the class.

Singhal, A. (2011). Some thoughts on personalization. *Google Inside Search*. https://search.googleblog.com/2011/11/some-thoughts-on-personalization.html

***Here is how Facebook can drive personalization for brands.* (2020). Meta for Business. https://www.facebook.com/business/news/personalization-opportunities-pitfalls-and-how-to-get-it-right**

Riecken, D. (2000). Introduction: personalized views of personalization. Communications of the ACM, 43(8), 26-28.

June 30: Interdisciplinary Origins of Personalization

Teeny, J. D., Siev, J. J., Briñol, P., & Petty, R. E. (2021). A review and conceptual framework for understanding personalized matching effects in persuasion. *Journal of Consumer Psychology*, *31*(2), 382-414.

Dijkstra, A. (2008). The Psychology of Tailoring-Ingredients in Computer-Tailored Persuasion. *Social and Personality Psychology Compass, 2*(2), 765–784.

Manber, U., Patel, A., & Robison, J. (2000). Experience with personalization of Yahoo!. Communications of the ACM, 43(8), 35-39.

Week 2: Personalization Mechanisms in Basic and Applied Settings

July 5: Basic Psychological Mechanisms of Personalization

Youyou, W., Stillwell, D., Schwartz, H. A., & Kosinski, M. (2017). Birds of a feather do flock together: Behavior-based personality-assessment method reveals personality similarity among couples and friends. *Psychological science*, *28*(3), 276-284.

Aaker, J. L. (1999). The malleable self: The role of self-expression in persuasion. *Journal of Marketing Research*, *36*(1), 45-57.

Petty, R. E., & Briñol, P. (2011). The elaboration likelihood model. *Handbook of theories of social psychology*, *1*, 224-245.

Crano, W. D., & Prislin, R. (2006). Attitudes and persuasion. Annu. Rev. Psychol., 57, 345-374.

Greenberg, D. M., Matz, S. C., Schwartz, H. A., & Fricke, K. R. (2020). The self-congruity effect of music. Journal of Personality and Social Psychology.

July 7: Personalization on Social Media

Matz, S. C., Kosinski, M., Nave, G., & Stillwell, D. J. (2017). Psychological targeting as an effective approach to digital mass persuasion. *Proceedings of the National Academy of Sciences, 114*(48), 12714–12719.

Zarouali, B., Dobber, T., De Pauw, G., & de Vreese, C. (2020). Using a Personality-Profiling Algorithm to Investigate Political Microtargeting: Assessing the Persuasion Effects of Personality-Tailored Ads on Social Media. *Communication Research,*

Week 3: Big Data & Personalization

July 12: Machine Learning & Personalization

Matz, S. C., & Netzer, O. (2017). Using Big Data as a window into consumers' psychology. *Current Opinion in Behavioral Sciences, 18, 7–12.*

Matz, S. C., Segalin, C., Stillwell, D., Müller, S. R., & Bos, M. W. (2019). Predicting the Personal Appeal of Marketing Images Using Computational Methods. Journal of Consumer Psychology, 29(3), 370–390

July 14: Generative AI and Personalization

Hermann, E. (2021). Artificial intelligence and mass personalization of communication content—An ethical and literacy perspective. *New Media & Society.* **https://doi.org/10.1177/14614448211022702**

van Noort, G., Himelboim, I., Martin, J., & Collinger, T. (2020). Introducing a Model of Automated Brand-Generated Content in an Era of Computational Advertising. Journal of Advertising, 49(4), 411–427

Week 4: Idiographic Paradigms & Personalization

July 19: Idiographic vs Nomothetic

Molenaar, P. C. (2004). A manifesto on psychology as idiographic science: Bringing the person back into scientific psychology, this time forever. *Measurement*, *2*(4), 201-218.

Barlow, D. H., & Nock, M. K. (2009). Why can't we be more idiographic in our research?. *Perspectives on Psychological Science*, *4*(1), 19-21.

Windelband, W. (1998). History and natural science. Theory & Psychology, 8(1), 5-22.

July 21:
Exam #1

Week 5: Privacy-Personalization Paradox

July 26: Privacy Implications

Matz, S. C., Appel, R. E., & Kosinski, M. (2020). Privacy in the age of psychological targeting. *Current opinion in psychology*, *31*, 116-121.

Harari, G. M. (2020). A process-oriented approach to respecting privacy in the context of mobile phone tracking. *Current opinion in psychology*, *31*, 141-147.

Sutanto, J., Palme, E., Tan, C. H., & Phang, C. W. (2013). Addressing the personalization-privacy paradox: An empirical assessment from a field experiment on smartphone users. MIS quarterly, 1141-1164.

Trepte, S., Reinecke, L., Ellison, N. B., Quiring, O., Yao, M. Z., & Ziegele, M. (2017). A cross-cultural perspective on the privacy calculus. Social Media+ Society, 3(1), 2056305116688035.

Schäwel, J., Frener, R., & Trepte, S. (2021). Political Microtargeting and Online Privacy: A Theoretical Approach to Understanding Users' Privacy Behaviors. Media and Communication, 9(4), 158-169.

Cloarec, J., Meyer-Waarden, L., & Munzel, A. (2022). The personalization–privacy paradox at the nexus of social exchange and construal level theories. Psychology & Marketing, 39(3), 647-661.

July 28: Ethical Issues

Jachimowicz, J., Matz, S., & Polonski, V. (2017). The behavioral scientist's ethics checklist. *Behavioral Scientist.*

Conway, M., & O'Connor, D. (2016). Social media, big data, and mental health: current advances and ethical implications. *Current opinion in psychology, 9,* 77-82.

Week 6: Applications of Personalization

August 2: Digital Health

Kocaballi, A. B., Berkovsky, S., Quiroz, J. C., Laranjo, L., Tong, H. L., Rezazadegan, D., ... & Coiera, E. (2019). The personalization of conversational agents in health care: systematic review. Journal of medical Internet research, 21(11), e15360.

Liu, K., & Tao, D. (2022). The roles of trust, personalization, loss of privacy, and anthropomorphism in public acceptance of smart healthcare services. *Computers in Human Behavior, 127,* 107026.

El Hassouni, A., Hoogendoorn, M., Eiben, A. E., Van Otterlo, M., & Muhonen, V. (2019, October). End-to-end personalization of digital health interventions using raw sensor data with deep reinforcement learning: A comparative study in digital health interventions for behavior change. In 2019 IEEE/WIC/ACM International Conference on Web Intelligence (WI) (pp. 258-264). IEEE.

Malgaroli, M., Hull, T. D., & Schultebraucks, K. (2021). Digital Health and Artificial Intelligence for PTSD: Improving Treatment Delivery Through Personalization. Psychiatric Annals, 51(1), 21-26.

August 4: Marketing & Politics

Laussel, D., & Resende, J. (2022). When Is Product Personalization Profit-Enhancing? A Behavior-Based Discrimination Model. *Management Science*.

Haenschen, K. (2022). The Conditional Effects of Microtargeted Facebook Advertisements on Voter Turnout. *Political Behavior*, 1-2

Parmelee, J. H., Perkins, S. C., & Beasley, B. (2022). Personalization of politicians on Instagram: what Generation Z wants to see in political posts. Information, Communication & Society, 1-16.

Week 7: Personalization in the Metaverse

August 9: Virtual Reality

Waltemate, T., Gall, D., Roth, D., Botsch, M., & Latoschik, M. E. (2018). The impact of avatar personalization and immersion on virtual body ownership, presence, and emotional response. IEEE transactions on visualization and computer graphics, 24(4), 1643-1652.

Behm-Morawitz, E. (2013). Mirrored selves: The influence of self-presence in a virtual world on health, appearance, and well-being. *Computers in human Behavior*, 29(1), 119-128.

Buetler, K. A., Penalver-Andres, J., Özen, Ö., Ferriroli, L., Müri, R. M., Cazzoli, D., & Marchal-Crespo, L. (2021). "Tricking the Brain" Using Immersive Virtual Reality: Modifying the Self-Perception Over Embodied Avatar Influences Motor Cortical Excitability and Action Initiation. Frontiers in human neuroscience, 15.

August 11: Augmented Reality

Baek, T. H., Yoo, C. Y., & Yoon, S. (2018). Augment yourself through virtual mirror: the impact of self-viewing and narcissism on consumer responses. *International Journal of Advertising*, 37(3), 421-439.

Javornik, A. (2016). 'It's an illusion, but it looks real!'Consumer affective, cognitive and behavioural responses to augmented reality applications. *Journal of Marketing Management*, 32(9-10), 987-1011.

Yaoyuneyong, G., Foster, J., Johnson, E., & Johnson, D. (2016). Augmented reality marketing: Consumer preferences and attitudes toward hypermedia print ads. Journal of Interactive Advertising, 16(1), 16-30.

Week 8: Future of Personalization

August 16:
Wrapping Up + Final Papers Due

August 18:
Exam #2