

Syllabus
MCO2072 Social Robots and Artificial Intelligence
Dr. Hector Gonzalez-Jimenez
Winter semester 2021/22

Level	Master	
Credits	3	
Student Contact Hours	2	
Workload	90 hours, 30 hours within class and 60 hours for self-study	
Prerequisites	-	
Time	tbd	
Room	tbd	
Start Date	October 15th, 2021	
Lecturer	Name	Hector Gonzalez-Jimenez, Dr.
	Office	-
	Virtual Office	-
	Office Hours	-
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Summary

Movies such as Chappie, I-Robot, or Ex Machina exemplify artificially intelligent robots that interact seemingly effortlessly with humans. While these science fiction movies seem sometimes far-fetched, real world applications where humans interact already with robots in various marketplace settings do exist. For instance, Softbank Robotics developed a popular social robot named Nao, while Sony recently introduced a pet dog robot called Aibo. These robots are already taking a role in various business settings to enhance the customer and service experience, while also acting as companion robots at homes. Furthermore, the Care-O-Bot is being used to assist humans in elderly care settings, while the Henna-Hotel in Tokyo is already using almost exclusively “robot staff” to serve its customers. These examples are just a short list of the potential applications of social robots in the marketplace (e.g. healthcare, education, retail). According to Boston Consulting Group the commercial robotics market alone is expected to grow to \$23 billion by 2025. Hence, it is imperative for students and future marketers to further their understanding of how to integrate and interact these robots in various business settings and society.

Learning Objectives

This course is designed for students who will either work in sectors that are, or will likely be, impacted by the inclusion of social robots. The course explores how social robots are integrated to support or even replace humans in several commercial or non-profit environments. In particular, future marketers, need to clearly understand customer perceptions of social robots and AI in order to satisfy current and future market needs and service expectations. In this respect, this course will include several scenarios to develop students’ creative and managerial skills and to mirror the contents taught.

The objectives of the course are:

- to strengthen students’ understanding of human-robot/AI interactions in the global marketplace across several sectors (e.g. healthcare, education, companionship, retail, services),
- to structure the students’ understanding of different robot types, applications and design features that enhance human-robot/AI interactions and the acceptance of these robots in the marketplace and in particular service settings,
- to make students aware of how and where to potentially integrate social robots and AI to improve the customer experience, and
- to provide students with skills to creatively plan and integrate social robots and AI into various marketplace scenarios.
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Learning Outcomes

At the end of the course, students should be able to:

- Recognize the impact of social robots and AI on various marketplace sectors and scenarios such as hotels, retail shops, restaurants, healthcare providers, etc.
- Discuss the various ways social robots and AI influence marketing practices and consumer demand.
- Apply different tools and methodologies to evaluate the attractiveness of business opportunities considering social robots and AI.
- Design a strategic plan for the integration of social robots and AI in a marketplace scenario (industry choice, specific application, robot type, robot tasks, benefits for the business operation and/or customer experience)

Outline of the Course

- The role of social robots and AI in various sectors such as hospitality, retail, IT, healthcare, etc.
- Robot and AI design features and their influence on consumer interactions
- Global factors and social robot and AI acceptance
- Emotional and cognitive abilities of social robots and AI
- Independent versus Assistive Social Robots: The role of AI
- Ethical implications of social robots and AI
- Debate, exercises, activities and role-plays.

Course Intended Learning Outcomes and their Contribution to Program Intended Learning

	Wissen und Verstehen			Einsatz, Anwendung und Erzeugung von Wissen		Kommunikation und Kooperation	Wissenschaftliches Selbstverständnis und Professionalität
Module	Wissensverbreiterung - Absolventinnen und Absolventen haben Wissen und Verstehen nachgewiesen, das auf der Bachelor-ebene aufbaut und dieses wesentlich vertieft oder erweitert. - Sie sind in der Lage, Besonderheiten, Grenzen, Terminologien und Lehrmeinungen ihres Lehrgebiets zu definieren und zu interpretieren.	Wissensvertiefung - Das Wissen und Verstehen der Absolventinnen und Absolventen bildet die Grundlage für die Entwicklung und/ oder Anwendung eigenständiger Ideen. Dies kann anwendungs- oder forschungsorientiert erfolgen. -Sie verfügen über ein breites, detailliertes und kritisches Verständnis auf dem neuesten Stand des Wissens in einem oder mehreren Spezialbereichen.	Wissensverständnis - Absolventinnen und Absolventen wägen die fachliche erkenntnistheoretisch begründete Richtigkeit unter Einbezug wissenschaftlicher und methodischer Überlegungen gegeneinander ab und können unter Zuhilfenahme dieser Abwägungen praxisrelevante und wissenschaftliche Probleme lösen.	Nutzung und Transfer -Absolventinnen und Absolventen integrieren vorhandenes und neues Wissen in komplexen Zusammenhängen auch auf der Grundlage begrenzter Informationen; - treffen wissenschaftlich fundierte Entscheidungen und reflektieren kritisch mögliche Folgen; - eignen sich selbstständig neues Wissen und Können an; - führen anwendungsorientierte Projekte weitgehend selbstgesteuert bzw. autonom durch.	Wissenschaftliche Innovation -Absolventinnen und Absolventen entwerfen Forschungsfragen; – wählen konkrete Wege der Operationalisierung von Forschung und begründen diese; – wählen Forschungsmethoden aus und begründen diese Auswahl; – erläutern Forschungsergebnisse und interpretieren diese kritisch.	-Absolventinnen und Absolventen tauschen sich sach- und fachbezogen mit Vertreterinnen und Vertretern unterschiedlicher akademischer und nicht-akademischer Handlungsfelder über alternative, theoretisch begründbare Problemlösungen aus; – binden Beteiligte unter der Berücksichtigung der jeweiligen Gruppensituation zielorientiert in Aufgabenstellungen ein; – erkennen Konfliktpotentiale in der Zusammenarbeit mit Anderen und reflektieren diese vor dem Hintergrund situationsübergreifender Bedingungen. - Sie gewährleisten durch konstruktives, konzeptionelles Handeln die Durchführung von situationsadäquaten Lösungsprozessen.	-Absolventinnen und Absolventen entwickeln ein berufliches Selbstbild, das sich an Zielen und Standards professionellen Handelns sowohl in der Wissenschaft als auch den Berufsfeldern außerhalb der Wissenschaft orientiert; - begründen das eigene berufliche Handeln mit theoretischem und methodischem Wissen und reflektieren es hinsichtlich alternativer Entwürfe; - schätzen die eigenen Fähigkeiten ein, nutzen sachbezogene Gestaltungs- und Entscheidungsfreiheiten autonom und entwickeln diese unter Anleitung weiter; - erkennen situations-adäquat und situationsübergreifend Rahmenbedingungen beruflichen Handelns und reflektieren Entscheidungen verantwortungsethisch; - reflektieren kritisch ihr berufliches Handeln in Bezug auf gesellschaftliche Erwartungen und Folgen und entwickeln ihr berufliches Handeln weiter.
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Teaching and Learning Approach

Learning on this course take place in several ways:

- Doing the recommended readings prior to and after the lectures
- Actively participating in class to obtain feedback
- Actively working in groups throughout the course on practical tasks on social robot and AI issues
- Harnessing the feedback opportunities offered throughout the term and building on that feedback
- Case studies, exercises, activities, role-plays and debate, de-briefing. Following the 70/30 principle of action learning, in which students are engaged at least 70% of the time in action, debate, and exercising their skills.

Literature and Course Materials

- Gonzalez-Jimenez, H. (2018). Taking the fiction out of science fiction: (Self-aware) robots and what they mean for society, retailers and marketers. *Futures*, 98, 49-56.
- Huang, M. H., & Rust, R. T. (2018). Artificial intelligence in service. *Journal of Service Research*, 21(2), 155-172.
- Piçarra, N., & Giger, J. C. (2018). Predicting intention to work with social robots at anticipation stage: Assessing the role of behavioral desire and anticipated emotions. *Computers in Human Behavior*, 86, 129-146.
- Shankar, V. (2018). How Artificial Intelligence (AI) Is Reshaping Retailing. *Journal of Retailing* 94 (4).
- Van Doorn, J., Mende, M., Noble, S. M., Hulland, J., Ostrom, A. L., Grewal, D., & Petersen, J. A. (2017). Domo arigato Mr. Roboto: Emergence of automated social presence in organizational frontlines and customers' service experiences. *Journal of Service Research*, 20(1), 43-58.
- Wirtz, J., Patterson, P. G., Kunz, W. H., Gruber, T., Lu, V. N., Paluch, S., & Martins, A. (2018). Brave new world: service robots in the frontline. *Journal of Service Management*, 29(5), 907-931.

Assessment

Student performance on this course is assessed through a practical group task. The overall mark for this course is determined by a group presentation and report. The focus of the task lies in applying the learned concepts to a business scenario. Students will select a company of their choice in one of the outlined scenarios (e.g., healthcare or elderly care facility, retail setting such a clothing shop, educational provider, etc.). Each session will cover specific topics, which will then be applied to the selected company scenario. Specific guidance on the task will be provided in class.

Assessment criteria will be:

The presentation will entail 70% of the final mark. Groups will receive verbal feedback after the presentation. This feedback should be considered and incorporated into the final report/presentation, which will be submitted via email 1 week after the presentation. This revised version will carry a weight of 30%.

Schedule

Friday 15th of October: 9:45-20:30

Saturday 16th of October: 9:45-20:30

Friday 22nd of October: 9:45-15:15

Academic Integrity and Student Responsibility

Students at master's level do not need reminding of their responsibilities. Still information on this point can be found in: [Link to the Code of Conduct for online Teaching](#)

Teaching Philosophy

My teaching philosophy focuses on a) autonomous student preparation for classes coupled with b) learning by knowledge application, both in and outside of class, and by c) improving through formative feedback (peer and professor).