Steven Silva
silvas1@cardiff.ac.uk
Cardiff University

Polina Oliinyk
oliinykp@cardiff.ac.uk
Cardiff University

José Patiño
patinominanjj@cardiff
Cardiff University

Dennys Paillacho
dpaillac@espol.edu.ec
FIEC/CIDIS

Juan Hernández
HernandezVegaJ@cardiff
Cardiff University

Nervo Verdezoto
verdezotodiasn@cardiff
Cardiff University

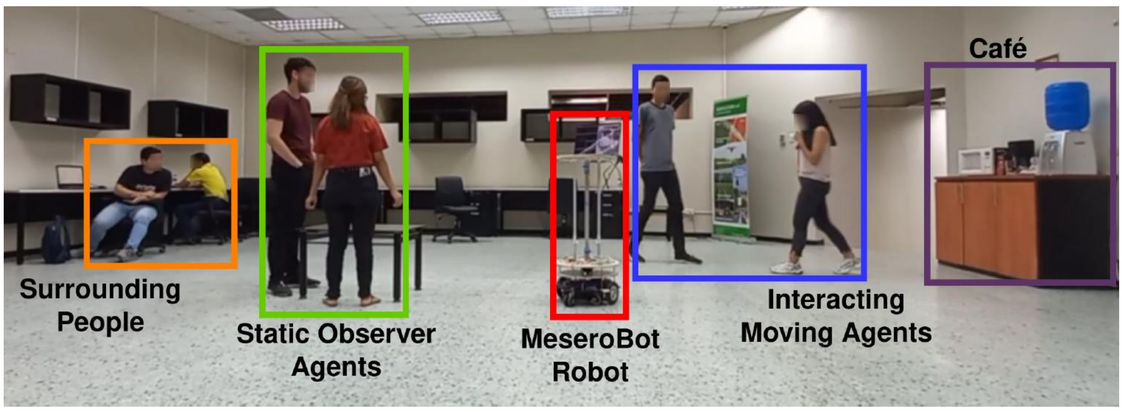
EXPROLING THE PERCEPTIONS AND CHALLENGES OF SOCIAL ROBOT NAVIGATION: TWO CASE STUDIES IN DIFFERENT SOCIO-TECHNICAL CONTEXTS

PROBLEMA

La aceptación de la navegación social de robots (SRN) en entornos reales sigue siendo poco comprendida, especialmente considerando diferencias culturales, contextuales y de diseño del robot.

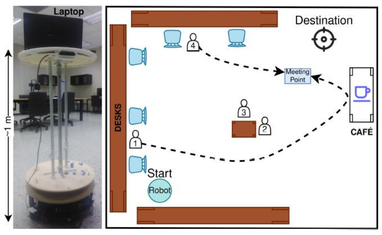
OBJETIVO GENERAL

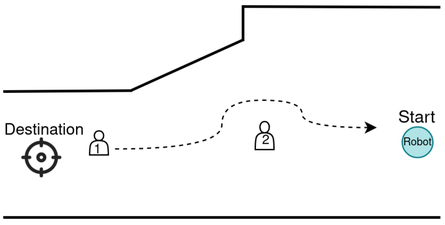
Analizar cómo distintos factores socio-técnicos influyen en la aceptación social de la navegación autónoma de robots en entornos compartidos, mediante estudios de caso en Ecuador y Reino Unido.

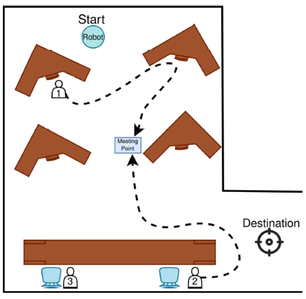


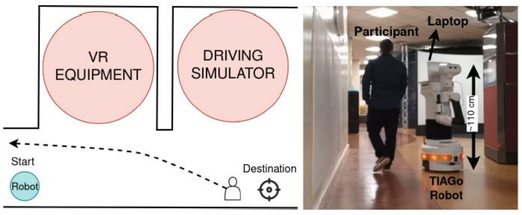
PROPUESTA

Implementar y evaluar cualitativamente un mismo algoritmo de navegación social en dos robots diferentes, desplegados en escenarios reales de oficina y pasillos en dos contextos socio-técnicos distintos.









RESULTADOS

Los participantes percibieron los robots como seguros y cómodos, aunque la velocidad, apariencia, distancia interpersonal y movimientos bruscos afectaron significativamente la confianza y aceptación.

	Case Study 1 (31 participants)	Case Study 2 (23 participants)
SRN positive experiences	12 participants expressed it was their first time experiencing with robots.	4 participants expressed it was their first time experiencing with robots.
	21 participants expressed having a positive experience by feeling *"comfortable"* and *"pleasant"*.	13 participants expressed having a positive experience by feeling *"safe"* and *"comfortable"*.
Perceived negative experiences on the used SRN capabilities	**Robot movement**	
	Participants negatively criticised the wobbling and doubtful movement of MeseroBot.	Participants negatively criticised the linear and doubtful movement of TIAGo.
	13 participants expressed MeseroBot was slow.	8 participants expressed TIAGo was slow.
	Personal space	
	7 participants expressed personal space was negatively affected and caused discomfort.	9 participants expressed personal space was negatively affected and caused discomfort.
Robot appearance effect on comfort	MeseroBot's appearance did not significantly affect participant's comfort.	TIAGo's human features positively affected some participants' comfort but also very negatively to others who called it *"creepy"*.
Suggestions to enhance SRN experience	Participants focused on improving MeseroBot's appearance and avoiding the wobble movement.	Participants focused on respecting the personal space and the linear movements of the robot.

CONCLUSIONES

- La aceptación de la navegación social depende del contexto socio-técnico. Se requieren trayectorias suaves, velocidades adaptativas y respeto al espacio personal para mejorar la experiencia humano-robot.