

DES Teaching Innovation Fund - Application and Report Form

Title	DES Teaching Innovation Fund - Application and Report Form-Richard Appleby-2023-12-20		
riqi	2024-05-24	Duration	2024-02-26
Flow No.	DES-20231220002	Application Date	2023-12-20
Employee ID	00100001080	Name	Richard Appleby
Extension Number	81889177	Department	XJTLU-AAU-DES-IND
Job Title	Professor	Email Address	richard.appleby@xjtlu.edu.cn
Project Title	Robotics Products	Requested Funding (RMB)	5000.00
C. Description (up to 300 words)	<p>This project will be introduced as a 'Live Industry Research Project', within the context of IND406 - Masters Module entitled 'Body Space and Machine'. The teaching introduces the skills and project challenges through digital interaction design processes for products and spaces, exploring different levels of awareness and 'coupling' between human action and the immediate spatial context. Certain specialist design skills are delivered through talks and practical sessions in the making workshop, or computer studios for coding work and actuator systems prototype constructions. This project will also undertake critical evaluation and revised development prototypes to improve the functional quality of innovative design constructions that are suitable for realistic test evaluation within a professional test facility. This includes the use and development of wearable products interacting within digital spatial environments, that support AI and advanced generative design processes. This also adopts recent technology systems that respond to trends for new consumer services for future living spaces, connecting HCI systems directly with human actuators and receptors.</p> <p>This collaborative project is supported by the Y-Robot company, who will provide significant background knowledge, test equipments and prototyping construction support to enable the realistic development and implementation of specific interactive wearables products. The YRobot company is located in SIP Suzhou with Research and Development Offices close the XJTLU campus. Project Innovations have been developed through prototype stage with specialist carbon fibre frameworks and other hybrid mechanisms and materials. YRobot also retains a highly sophisticated Human</p>		D. Potential Value and Impact (up to 200 words)
			<p>This particular project targets the Design School Graduate Attributes in specific ways: It is a very Human Centered design project that observes and tests physical health and human training needs, through observation and testing to collect user data, then developing user orientated design solutions. Together with the support of the Y Robot company, the project will maintain Professional and Industry ready processes using professional test environment to qualify prototypes, maintaining a commercial objective to future applications and working within the professional ethical and social responsibilities for design practitioners. This project will support graduates in their future professional advancement and membership of the accreditation body (CSD). Particularly this project is positioned to involve a more challenging applications of technology, in both the electro-mechanical prototype constructions and working within the digital system environment to build user-tested design solutions</p>

	<p>Testing Labs with significant intelligent apparatus for user testing.</p> <p>The teaching process will focus on three specific categories and applications that offer future potential and innovative wearables products:</p> <ol style="list-style-type: none"> 1. Design development of Exoskeletal Wearable Products and Service applications for hospitals and general health-care markets. 2. Interactive Fashion Wearables with Robotic functions 3. Sports training applications for Intelligent Exoskeletal systems 		
<p>E. Work Plan and Timeline (up to 150 words)</p>	<p>Stage 1 - February / March 2024</p> <ul style="list-style-type: none"> - Research Exploration + Design Concepts with Sketch visuals, and Models for existing healthcare applications and future consumer products for YRobot systems. - Visits to YRobot and materials research to develop new product constructions - XJTLU Industrial design with meetings at YRobot - Outcome = Design Research Report <p>Stage 2 - March / April 2024</p> <ul style="list-style-type: none"> - Detail Design and development for simple User testing for New Products - Industrial Design concepts for New Products + User tests at YRobot - Outcome = Design presentations + test analysis statistics and data <p>Stage 3 - April / May 2024</p> <ul style="list-style-type: none"> - CAD Detail Development and printed/machined prototypes to test the mechanical function and user performance - CAD Specifications + IND Prototypes + YRobot manufacture support. - User Testing at YRobot - Outcome = Prototype functional Products, test of material characteristics <p>Stage 4 - May / June 2024</p> <ul style="list-style-type: none"> - Journal Paper + Design Data (CAD) - Writing up the user test analysis and technology development, completing Manufacturing specification and journal publication, with YRobot. - Outcome = Journal Paper + YRobot Patents & Manufacturing Specification (if required) <p>Students will be using their allocated ES301 Studio Space for design development, the DB Fab-Lab for prototype constructions, the IR311 Research Labs for simple User testing.</p>	<p>F. Consultation (up to 100 words)</p>	<p>This project forms part of the curricular IND406 Module - Body, Space and Machine. There will be several learning and teaching activities within this module, where this Robotics Project features as one of the main design projects for the PG1 cohort in Semester 2. The PI is also the Module Leader and the other teachers have been consulted regarding this project. The PD for the Masters is also supporting this project and has attended the early collaboration meetings. The project will require some lab use, both the Experience and Interaction Lab and the DB/ES Fab-Labs for the construction and creating designed prototypes. The Lab Leaders have been consulted.</p>
			<p>- There are points in the user test cycles that will generate significant data responses which have to be organized and disseminated to the student and staff teams, so this User Research Person will coordinate</p>

Total amount	5000.00	H. Budget Justification (up to 100 words)	and organize these aspects to ensure that the data evidence of the design development is correctly recorded at each stage. - Within the making and prototyping process, there are requirements to establish materials selection, machine time access, repetitions and productions that need to be supported for the project to succeed within the timescale indicated.
If the project	Yes	IMPLICATIONS:	User testing will be managed by Y Robot within their commercial laboratories and ethical control conditions and measures.
PROTECTIONS:	Ethical protections will be managed by the collaboration company Y Robot.	申请人勾选	<input checked="" type="radio"/> I hereby declare that all the information given is true and accurate, and I will strictly follow the University's academic integrity standards.
Review Feedback		Review Feedback	
Please summarise the project results/outcomes with reference to the objectives stated in Section D. (up to 150 words)		Please report on the budget expenditure with reference to the plan in Section G. (up to 150 words)	
Please report any challenges or adverse circumstances that affected the project. Include any suggestion for additional support and/or improvement of the TIF scheme. (up to 300 words)			

<input type="checkbox"/>	No.	Name	XJTLU unit or external institution	Position	Role
<input type="checkbox"/>	1	Richard Appleby	Industrial Design	Professor	Primary Investigator

<input type="checkbox"/>	No.	Description	Amount (RMB)
<input type="checkbox"/>	1	0	0.00

<input type="checkbox"/>	No.	Description	Amount (RMB)

<input type="checkbox"/>	1	0	0.00
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<input type="checkbox"/>	No.	Description	Amount (RMB)
<input type="checkbox"/>	1	0	0.00

<input type="checkbox"/>	No.	Description	Amount (RMB)
<input type="checkbox"/>	1	Research Person to support the collection and organization of User test data, as a part of the ongoing iterative project development process.	2500.00

<input type="checkbox"/>	No.	Description	Amount (RMB)
<input type="checkbox"/>	1	Production person to support the project activities and processes, to coordinate and facilitate the physical production of prototypes described above.	2500.00

<input type="checkbox"/>	No.	Description	Amount (RMB)
<input type="checkbox"/>	1	0	0.00

Comments



Richard Appleby

XJTU-AAU-DES-IND Receipt : Yijun Zhao

2023-12-20 14:59:46 [Applicant / Copy Recipient]



Richard Appleby

XJTU-AAU-DES-IND Receipt : Marco Cimillo

2023-12-20 14:59:46 [Applicant / Submit]

