MAURÍCIO SOUSA
Curriculum Vitae

Email: antonio.sousa@ist.utl.pt
Homepage/Portfolio: web.ist.utl.pt/antonio.sousa
Google Scholar 210+ citations, h-index 10
ORCID 0000-0003-1438-2882

SHORT BIO

I am a HCI researcher. Previously I was a researcher at the Visualization and Intelligent Multimodal Interfaces Group (VIMMI) under the supervision of Professor Joaquim Jorge. Received my PhD (2020), MSc (2014) and BSc (2012) degrees in Computer Science and Engineering. In my research, I have been designing and evaluating novel interaction techniques for the engineering, architecture and medical fields, focussing on computer supported remote collaborative work in Mixed Reality environments. I also have experience in 3D user interfaces, interactive spaces, touch and mid-air gestures. And I have been fortunate to see my research published in top international conferences and journals, such as ACM CHI, ACM ISS, ACM IUI, ACM VRST, INTERACT, IJHCS, and IEEE TVCG. I am currently a member of the organising committee of the international conferences ACM ISS and IEEE VR.

RESEARCH AND TEACHING INTERESTS

Human-Computer Interaction, 3D User Interfaces, collocated and remote collaboration using multiple interactive surfaces, holograms, and Mixed Reality.

EDUCATION

INSTITUTO SUPERIOR TÉCNICO • UNIVERSITY OF LISBON

2020 Ph.D. in Computer Science and Engineering
Thesis: Perception Manipulation for Seamless Face-to-face Remote Collaboration
Advisor: Prof. Joaquim Jorge
Grade: Summa Cum Laude (highest honour for Doctoral Degree)
Thesis committee: Prof. Anthony Steed, Prof. Pedro Campos, Prof. Carlos Martinho, Prof. Miguel Sales Dias, and Prof. Pavão Martins

2014 MSc in Information Systems and Computer Engineering
Thesis: Remote Proxemics for Collaborative Virtual Environments
Advisor: Prof. Joaquim Jorge, Prof. Alfredo Ferreira
Grade: 18
Thesis committee: Prof. Carlos Duarte, Prof. Pedro Sousa

2012 BSc in Information Systems and Computer Engineering

EXPERIENCE

• **CHAMPALIMAUD CENTER FOR THE UNKNOWN**
RESEARCH • 2018 - 2020 • Researching, designing and evaluating novel mixed reality interaction techniques for minimally invasive laparoscopic surgery.

• **INESC-ID, VISUALIZATION AND INTELLIGENT MULTIMODAL INTERFACES GROUP (VIMMI)**
RESEARCH • 2012 - 2020 • Researching, designing and evaluating novel interaction techniques in 3D user interfaces for collocated and remote collaboration using head-mounted displays, walls, tabletops, mobiles, large scale displays, and wearables. I also helped maintaining VIMMI's media lab.

• **Dep. COMPUTER SCIENCE AND ENGINEERING, INSTITUTO SUPERIOR TÉCNICO, UNIVERSITY OF LISBON**
TEACHING ASSISTANT • 2nd Semester, 2017/18 • Human-Computer Interaction

SELECTED PUBLICATIONS

S9 **Magic Carpet: Interaction Fidelity for Flying in VR**,
Daniel Medeiros, Maurício Sousa, Alberto Raposo, and Joaquim Jorge,
IEEE Transactions on Visualization and Computer Graphics (TVCG), 2019

S8 **WARPING DEIXIS: Distorting Gestures to Enhance Collaboration,**
Maurício Sousa, Rafael Kuffner Dos Anjos, Daniel Mendes, Mark Billinghurst, and Joaquim Jorge,
ACM Conference on Human Factors in Computing Systems (CHI), 2019

S7 **Using Custom Transformation Axes for Mid-Air Manipulation of 3D Virtual Objects,**
Daniel Mendes, Maurício Sousa, Rodrigo Lorena, Alfredo Ferreira, and Joaquim Jorge,
ACM Symposium on Virtual Reality Software and Technology (VRST), 2017

S6 **Creepy Tracker Toolkit for Context-aware Interfaces,**
Maurício Sousa, Daniel Mendes, Rafael Kuffner dos Anjos, Daniel Medeiros, Alberto Raposo, Alfredo Ferreira, João Pereira, and Joaquim Jorge,
ACM Interactive Surfaces and Spaces (ISS), 2017

S5	**VRRRRoom: Virtual Reality for Radiologists in the Reading Room,**
	Maurício Sousa, Daniel Mendes, Soraia Paulo, Nuno Matela, Joaquim Jorge, and Daniel S. Lopes,
	ACM Conference on Human Factors in Computing Systems (CHI), 2017
S4	**Design and evaluation of a novel out-of-reach selection technique for VR using iterative refinement,**
	Daniel Mendes, Daniel Medeiros, Maurício Sousa, Eduardo Cordeiro, Alfredo Ferreira, and Joaquim Jorge,
	Elsevier Computers & Graphics, 2017
S3	**Hip-directed walking-in-place using a single depth camera,**
	Luís Bruno, Maurício Sousa, Alfredo Ferreira, João Madeiras Pereira, and Joaquim Jorge,
	International Journal of Human-Computer Studies (IJHCS), Elsevier, 2017
S2	**SleeveAR: Augmented Reality for Rehabilitation using Realtime Feedback,**
	Maurício Sousa, João Vieira, Daniel Medeiros, Artur Arsénio, and Joaquim Jorge,
	ACM Intelligent User Interfaces (IUI), 2016
S1	**Eery Space: Facilitating Virtual Meetings Through Remote Proxemics,**
	Maurício Sousa, Daniel Mendes, Alfredo Ferreira, João Madeiras Pereira, and Joaquim Jorge,
	Human-Computer Interaction—INTERACT, 2015

ACADEMIC SERVICE

Program Committee:

ACM ACM International Conference on Multimodal Interaction (ICMI): 2020

Peer Reviewer:

IEEE International Symposium on Mixed and Augmented Reality (ISMAR): 2017, 2018, 2019, 2020

Elsevier Computers & Graphics: 2018, 2019, 2020

ACM Symposium on User Interface Software and Technology (UIST): 2020

ACM Conference on Human Factors in Computing Systems (CHI): 2018, 2020

ACM International Conference on Tangible, Embedded and Embodied Interaction (TEI): 2018, 2020

ACM International Conference on Interactive Surfaces and Spaces (ISS): 2016, 2017, 2018, 2019

ACM ACM International Conference on Multimodal Interaction (ICMI): 2018, 2019

ACM Symposium on Virtual Reality Software and Technology (VRST): 2017, 2018

ACM Symposium on Spatial User Interaction (SUI): 2017

ACM Conference on Designing Interactive Systems (DIS): 2016

IEEE Consumer Electronics Magazine (CEM): 2016

Conference Organization:

IEEE Conference on Virtual Reality and 3D User Interfaces (VR) 2020: Organising Committee member

ACM International Conference on Interactive Surfaces and Spaces (ISS) 2020: Organising Committee member

Eurographics 2016: Organising Committee member

REFERENCES

R1	Joaquim Jorge, PhD	Full Professor, Instituto Superior Técnico, University of Lisbon
		Senior Researcher, Inesc-ID
		Rua Alves Redol, 9
		1000-021 Lisboa,
		Portugal
		jorgej@tecnico.ulisboa.pt

R2	Graig Anslow, PhD	Lecturer (Assistant Professor)
		School of Engineering and Computer Science
		Victoria University of Wellington
		PO Box 600, Wellington, 6140,
		New Zealand
		craig@ecs.vuw.ac.nz

FULL LIST OF PUBLICATIONS

15 conference proceedings, 5 journal articles
210+ citations, h-index 10 ([Google Scholar](#))

Peer-reviewed Conference Proceedings

C15   Negative Space: Investigating Workspace Awareness in 3D Face-to-face Remote Collaboration
Maurício Sousa, Daniel Medeiros, and Joaquim Jorge
ACM SIGGRAPH International Conference on Virtual-Reality Continuum and its Applications in Industry (VRCAI), 2019

C14   Safe Walking in VR
Maurício Sousa, Daniel Medeiros, and Joaquim Jorge
ACM SIGGRAPH International Conference on Virtual-Reality Continuum and its Applications in Industry (VRCAI), 2019

C13   Adventures in Hologram Space: Exploring the Design Space of Eye-to-eye Volumetric Projection-based Telepresence
Rafael Kuffner dos Anjos, **Maurício Sousa**, Daniel Medeiros, Daniel Mendes, Mark Billinghurst, Craig Anslow and Joaquim Jorge
ACM Symposium on Virtual Reality Software and Technology (VRST), 2019

C12   WARPING DEIXIS: Distorting Gestures to Enhance Collaboration
Maurício Sousa, Rafael Kuffner Dos Anjos, Daniel Mendes, Mark Billinghurst, and Joaquim Jorge
ACM Conference on Human Factors in Computing Systems (CHI), 2019

C11   Using Custom Transformation Axes for Mid-Air Manipulation of 3D Virtual Objects
Daniel Mendes, **Maurício Sousa**, Rodrigo Lorena, Alfredo Ferreira, and Joaquim Jorge
ACM Symposium on Virtual Reality Software and Technology (VRST), 2017

C10   Creepy Tracker Toolkit for Context-aware Interfaces
Maurício Sousa, Daniel Mendes, Rafael Kuffner dos Anjos, Daniel Medeiros, Alberto Raposo, Alfredo Ferreira, João Pereira, and Joaquim Jorge
ACM Interactive Surfaces and Spaces (ISS), 2017

C9   VRRRRoom: Virtual Reality for Radiologists in the Reading Room
Maurício Sousa, Daniel Mendes, Soraia Paulo, Nuno Matela, Joaquim Jorge, and Daniel S. Lopes
ACM Conference on Human Factors in Computing Systems (CHI), 2017

C8   PRECIOUS! Out-of-reach Selection using Iterative Refinement in VR
Daniel Mendes, Daniel Medeiros, Eduardo Cordeiro, **Maurício Sousa**, Alfredo Ferreira, and Joaquim Jorge
IEEE Symposium on 3D User Interfaces (3DUI), 2017

C7   Mid-air Modelling with Boolean Operations in VR
Daniel Mendes, Daniel Medeiros, **Maurício Sousa**, Ricardo Ferreira, Alberto Raposo, Alfredo Ferreira , and Joaquim Jorge
IEEE Symposium on 3D User Interfaces (3DUI), 2017

C6   Effects of Speed and Transitions on Target-based Travel Techniques
Daniel Medeiros, Eduardo Cordeiro, Daniel Mendes, **Maurício Sousa**, Alberto Raposo, Alfredo Ferreira and Joaquim Jorge
ACM Symposium on Virtual Reality Software and Technology (VRST), 2016

C5   Perceiving Depth: Optical versus Video See-through
Daniel Medeiros, **Maurício Sousa**, Daniel Mendes, Alberto Raposo, and Joaquim Jorge
ACM Symposium on Virtual Reality Software and Technology (VRST), 2016

C4   SleeveAR: Augmented Reality for Rehabilitation using Realtime Feedback
Maurício Sousa, João Vieira, Daniel Medeiros, Artur Arsenio, and Joaquim Jorge
ACM Intelligent User Interfaces (IUI), 2016

C3	From Tecton to Teknos: Going back to the Classical Roots of Architecture. Daniel Mateus, **Maurício Sousa**, Rui de Klerk, Sandra Gama, Joaquim Jorge, and José Duarte Education and research in Computer Aided Architectural Design in Europe (eCAADe), 2015
C2	Eery Space: Facilitating Virtual Meetings Through Remote Proxemics **Maurício Sousa**, Daniel Mendes, Alfredo Ferreira, João Madeiras Pereira, and Joaquim Jorge INTERACT, 2015
C1	Beyond Post-It: Structured Multimedia Annotations for Collaborative VEs João Guerreiro, Daniel Pires, **Maurício Sousa**, Daniel Mendes, Ismael Santos, Alberto Raposo, and Joaquim Jorge Eurographics Symposium on Virtual Environments(EGVE), 2014
P1	ThumbCam: Returning to single touch interactions to explore 3D virtual environments Daniel Mendes, **Maurício Sousa**, Alfredo Ferreira, and Joaquim Jorge ACM Interactive Tabletops and Surfaces(ITS), 2014

Journal Articles

J5	Anatomy Studio: a Tool for Virtual Dissection Through Augmented 3D Reconstruction Sessions Ezequiel R Zorzal, **Maurício Sousa**, Daniel Mendes, Rafael K dos Anjos, Soraia F. Paulo, Pedro Rodrigues, José Mendes, Vincent Delmas, Jean-Francois Uhl, José Mogorrón, Daniel S. Lopes, and Joaquim Jorge Computers & Graphics, 2019
J4	Magic Carpet: Interaction Fidelity for Flying in VR Daniel Medeiros, **Maurício Sousa**, Alberto Raposo, and Joaquim Jorge IEEE Transactions on Visualization and Computer Graphics (TVCG), 2019
J3	Design and evaluation of novel out-of-reach selection techniques for VR using iterative refinement Daniel Mendes, Daniel Medeiros, **Maurício Sousa**, Eduardo Cordeiro, Alfredo Ferreira, and Joaquim Jorge Computers & Graphics, 2017
J2	Hip-directed walking-in-place using a single depth camera Luís Bruno, **Maurício Sousa**, Alfredo Ferreira, João Madeiras Pereira, and Joaquim Jorge International Journal of Human-Computer Studies (IJHCS), Elsevier, 2017
J1	Expeditious Illustration of Layer-Cake Models On and Above a Tactile Surface Daniel S. Lopes, Daniel Mendes, **Maurício Sousa**, and Joaquim Jorge Computers & Geosciences (in press), 2016

Other Peer Reviewed Publications

O9	Demo hour Paden Shorey, Audrey Girouard, Sang Ho Yoon, Yunbo Zhang, Ke Huo, Karthik Ramani, **Maurício Sousa**, Daniel Mendes, Soraia Paulo, Nuno Matela, Joaquim Jorge, Daniel S. Lopes, Dirk Wenig, Johannes Schöning, Alex Olwal, Mathias Oben, and Rainer Malaka 2017. Demo hour. interactions 24, 6 (October 2017), 8-11.
O8	Remote Proxemics **Maurício Sousa**, Daniel Mendes, Daniel Medeiros, Alfredo Ferreira, João Madeiras Pereira, and Joaquim Jorge Book chapter in Collaboration Meets Interactive Spaces, Springer, 2016

O7   Evaluation of Travel Techniques for Virtual Reality
      Eduardo Cordeiro, Daniel Medeiros, Daniel Mendes, **Maurício Sousa**, Alberto Raposo, Alfredo Ferreira,
      and Joaquim Jorge
      Portuguese Meeting of Computer Graphics (EPCG), 2016

O6   Beyond Eery Space: Applying Gradual Engagement to Remote Proxemics
      Maurício Sousa, Daniel Medeiros, Alberto Raposo, and Joaquim Jorge
      Collaboration meets Interactive Surfaces Workshop, ACM Interactive Tabletops and Surfaces(ITS), 2015

O5   Augmented Reality for Rehabilitation Using Multimodal Feedback
      João Vieira, **Maurício Sousa**, Artur Arsénio, and Joaquim Jorge
      REHAB2015 Workshop

O4   Enabling Remote Proxemics through Multiple Surfaces
      Daniel Mendes, **Maurício Sousa**, João Madeiras Pereira, Alfredo Ferreira, and Joaquim Jorge
      Collaboration meets Interactive Surfaces Workshop, ACM Interactive Tabletops and Surfaces(ITS), 2014

O3   Eery Proxemics: Proximidade à Distância usando Múltiplas Superfícies
      Maurício Sousa, Daniel Mendes, João Madeiras Pereira, Alfredo Ferreira, and Joaquim Jorge
      Portuguese Meeting of Computer Graphics (EPCG), 2014

O2   Binding a Handheld Device with its Owner
      Maurício Sousa and Joaquim Jorge
      Collaboration meets Interactive Surfaces Workshop, ACM Interactive Tabletops and Surfaces(ITS), 2013

O1   Collaborative 3D Visualization on Large Screen Displays
      Daniel Mendes, **Maurício Sousa**, Bruno Araújo, Alfredo Ferreira, Hildegardo Noronha, Pedro Campos,
      Luciano Soares, Alberto Raposo, and Joaquim Jorge
      Powerwall Workshop, SIGCHI Conference on Human Factors in Computing Systems(CHI), 2013