Judith Amores

Research Fellow, Harvard Medical School/MGH
Research Affiliate, MIT Media Lab

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Personal Statement

My research is in Human-Computer Interaction (HCI) and uses an interdisciplinary approach combining methods from the fields of Engineering, Psychology, and Design. I create **multi-sensory, interactive technologies for health, wellness and study their effects on users**. I created immersive **VR/AR experiences and wearable systems** that adapt their outputs (audio-visuals and scent, respectively) in real-time, based on the user's context data and physiological information to provide **closed-loop interventions**. My research vision is to create subtle User Interfaces to improve our **health and enhance our cognition effortlessly**, ranging from explicit, conscious wakefulness interactions to implicit HCI during sleep. I use non-traditional stimuli (such as smell) as an implicit, subtle, and less conscious output and physiological information as the system input. I aim to develop concepts, devices and technologies for personalized health interventions and cognitive enhancement using **human-centered design and engineering.** My research contributes to the development of new technologies and applications, and includes studies to evaluate their effects on the user.

Education

Ph.D. (Massachusetts Institute of Technology - MIT Media Lab)   *09/16 - 09/20*

MEDIA ARTS AND SCIENCES PROGRAM. ADVISED BY PROFF. PATTIE MAES.

Master of Science (MIT Media Lab)   *09/14 - 05/16*

HUMAN COMPUTER INTERACTION / MEDIA ARTS AND SCIENCES PROGRAM

Bachelor of Engineering (University Ramon Llull)   *09/09 - 06/14*

MULTIMEDIA ENGINEERING/COMPUTER SCIENCE & UX DESIGN (BARCELONA, SPAIN)

Professional Experience

Research Fellow: Mass. General Hospital/Harvard Medical School   *Boston, U.S.A*

DEPARTMENT OF PSYCHIATRY & SURGERY (PRESENT)   *10/20 - Present*

- I work on non-pharmacological, technological interventions to improve the patient experience.
- I develop scent and biofeedback VR experiences to reduce anxiety, decrease pain and improve quality of life of patients undergoing cardiothoracic surgery.

Teaching Fellow: Harvard University   *Cambridge, U.S.A*

GENED 1038: SLEEP (800 STUDENTS)   *Fall 2021*

- Lead weekly in-person sections and virtual office hours via Zoom 33 students.
- Taught weekly classes, lead discussions, graded and evaluated students, evaluated undergraduate student performance on homework, problem sets and maintained accurate grade records and attendance.

Research Affiliate: MIT Media Lab   *Cambridge, U.S.A*

FLUID INTERFACES GROUP. ADVISED BY ASSOCIATE PROFESSOR PATTIE MAES   *08/20 - Present*

Creative Technologist: Google   *New York, USA*

GOOGLE CREATIVE LAB. ADVISED BY AMIT PITARU, ANDY BERNDT, ROBERT WONG   *06/17 - 09/17*

- Developed the 3 first AR experiments launched using ARCore by Google. See them *here* 🔗

Research Intern: Microsoft Research   *Seattle, U.S.A*

HCI RESEARCH INTERN, MSR NEXT. ADVISED BY JARON LANIER   *06/16 - 09/16*

- Lead engineer and designer of HoloARt, a mixed reality system developed for the Hololens that allows the user to turn their physical environment into a canvas where digital holograms and physical objects co-exist in the real and virtual world.

Research Intern: Microsoft Research (MSR Next)   *Seattle, U.S.A*

HCI Research Intern. MSR Next. Advised by Lior Shapira and Jaron Lanier   *06/15 - 09/15*

- Developed and conducted children studies using TactileVR, a system that integrates tracking information from the head, hands, feet of the kid and surrounding toys to infer complex gestures and interactions and represent this information as virtual proxies in the 3D environment.

Research Assistant: MIT Media Lab   *Cambridge, U.S.A*

Fluid Interfaces Group. Advised by Associate Professor Pattie Maes   *09/13 - 09/20*

- I ideated, designed, deployed and conducted user studies with technologies that I developed. From Brain Computer Interfaces to VR and AR experiences for emotion regulation and wellbeing. See more info *in this link* ⚲ .

Research Intern: University Ramon Llull   *Barcelona, Spain*

HCI Research Intern. Media Technologies Department. Advised by David Miralles   *09/11 - 02/13*

- Developed augmented reality experiences using motion capture and Unity3D for interactive avatars. Collaborated with the department of Psychology to develop and augmented reality app for the treatment of arachnophobia.

Fellowships & Awards

2021	**Winner**, Edison Awards, Personal Technology Category, Bronze for *Essence Wearables*.	*Edison Awards*
2020-21	**Fellowship**, Postdoctoral Fellowship MGH, National Institute of Health funded projects.	*NIH*
2019	**Winner**, Best Demonstration Award at the IEEE EMBS Workshop Brain, Mind, and Body: Cognitive Neuroengineering for Health and Wellness	*IEEE*
2019	**Winner**, $10000 MISTI Grant (with Prof. P. Maes and B. Eskofier)	*MIT*
2018	**Winner**, Best Student Paper Award at the 2018 IEEE BSN Conference	*IEEE*
2018	**Grant**, $18000 Funding from International Flavors and Fragrances (with Prof. P. Maes)	*IFF*
2018	**Nomination**, Google PhD Fellowship	*Google*
2016-18	**Fellowship**, Winner Facebook Graduate Fellowship: 2 year PhD tuition and $74,000	*Facebook*
2017	**Fellowship**, INK 2017 Fellow	*INK Talks*
2017	**Nominated**, Microsoft PhD Fellowship	*Microsoft*
2017	**Winner**, CHI Golden Mouse Award for the video showcase of Essence	*CHI*
2017	**Winner**, Cosmetic Executive Women Scent Innovator Award: $10,000	*CEW*
2016	**Finalist**, Innovation By Design: Over 1700 designs submitted to Co.Design's	*Fast Company*
2014-16	**Grant**, Lego Fellowship: 2 year Masters tuition (with Prof. P. Maes)	*Lego Foundation*
2014	**Grant**, $40,000 Research Funding from Bentley (with Prof. P. Maes)	*Bentley*
2014	**Winner**, Best Idea Award & Winners of the Volkswagen/IDEO Hackathon: $5,000	*Volkswagen*
2011-13	**Grant**, Research Assistantship from Funitec Foundation	*URL*

Publications

Was granted 2 patents and published over **30 peer-reviewed publications**; 1 best paper award (IEEE BSN), 1 best video showcase (ACM CHI), 1 best demo award (IEEE EMBC).

Selected Peer-Reviewed Papers ⚲

Amores, J., Dotan, M. & Maes, P. (2022). Development and Study of Ezzence: a Modular Scent Wearable to Improve Well-being in Home Sleep Environments. Frontiers in Psychology.

Carr, M., Haar, A., **Amores, J.**, et al. (2020). Dream engineering: Simulating worlds through sensory stimulation. Consciousness and cognition, 83, 102955. `https://doi.org/10.1016/j.concog.2020.102955`

Wang, Y.*, **Amores, J*.**, & Maes, P. (2020, May). On-Face Olfactory Interfaces. In Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20). Association for Computing Machinery, New York, NY, USA, 1–9. DOI: `https://doi.org/10.1145/3313831.3376737`

Amores, J., Dotan, M., Maes, P., B. M. (2019, July). An Exploration of Form Factors for Sleep-Olfactory Interfaces. In 2019 41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), Berlin, Germany, 2019, pp. 1456-1460, DOI: `https://doi.org/10.1109/EMBC.2019.8856805`

Koushik, A., **Amores, J.**, & Maes, P. (2019, May). Real-time Smartphone-based Sleep Staging using 1-Channel EEG. In 2019 IEEE 16th International Conference on Wearable and Implantable Body Sensor Networks (BSN), Chicago, IL, USA, 2019, pp. 1-4, DOI: `https://doi.org/10.1109/BSN.2019.8771091`

Richer, R., Zhao, N., **Amores, J.**, Eskofier, B. M., & Paradiso, J. A. (2018, July). Real-time Mental State Recognition using a Wearable EEG. In 2018 40th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), Honolulu, HI, 2018, pp. 5495-5498. DOI: `https://doi.org/10.1109/EMBC.2018.8513653`

Amores, J., Hernandez, J., Dementyev, A., Wang, X., & Maes, P. (2018, July). BioEssence: A Wearable Olfactory Display that Monitors Cardio-respiratory Information to Support Mental Wellbeing. In 2018 40th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), Honolulu, HI, 2018, pp. 5131-5134, DOI: `https://doi.org/10.1109/EMBC.2018.8513221`

Amores, J., Richer, R., Zhao, N., Maes, P., & Eskofier, B. M. (2018, March). "Promoting relaxation using virtual reality, olfactory interfaces and wearable EEG". In 2018 IEEE 15th International Conference on Wearable and Implantable Body Sensor Networks (BSN), Las Vegas, NV, 2018, pp. 98-101, DOI: `https://doi.org/10.1109/BSN.2018.8329668` *** **Award: Best Paper**

Amores, J., & Maes, P. (2017, May). "Essence: Olfactory Interfaces for Unconscious Influence of Mood and Cognitive Performance". In Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems (CHI '17). Association for Computing Machinery, New York, NY, USA, 28–34. DOI: `https://doi.org/10.1145/3025453.3026004`
*** **Award: Best Videoshowcase**

Shapira, L., **Amores, J.**, & Benavides, X. (2016, September). "TactileVR: Integrating Physical Toys into Learn and Play Virtual Reality Experiences," 2016 IEEE International Symposium on Mixed and Augmented Reality (ISMAR), Merida, 2016, pp. 100-106, `https://doi.org/10.1109/ISMAR.2016.25`.

Lanier, J., et al., including **Amores, J.** (2016, September). "The RealityMashers: Augmented Reality Wide Field-of-View Optical See-Through Head Mounted Displays," 2016 IEEE International Symposium on Mixed and Augmented Reality (ISMAR-Adjunct), Merida, 2016, pp. 141-146, `https://doi.org/10.1109/ISMAR-Adjunct.2016.0061`

Selected Peer-Reviewed Short and Workshop Papers _____

Amores, J., Wang, J., Dotan, M., Maes, P., 2019. Lotuscent: Targeted memory reactivation for wellbeing using scent and VR biofeedback. IEEE EMBS Symposium and Workshop on Brain, Mind, and Body: Cognitive Neuroengineering for Health and Wellness (Demonstration and Poster). **Award: Best Demo**

Amores, J., Fusté, A., Richer, R., Maes, P., 2019. Deep reality: an underwater VR experience to promote relaxation by unconscious HR, EDA, and brain activity biofeedback. In ACM SIGGRAPH 2019 Virtual, Augmented, and Mixed Reality (SIGGRAPH '19). ACM, New York, NY, USA.

Koushik, A., **Amores, J.**, & Maes, P. (2018). Real-Time Sleep Staging using Deep Learning on a Smartphone for a Wearable EEG. In 2018 NeurIPS Workshop (Machine Learning for Health (ML4H)).

Amores, J., Lanier, J. 2017. HoloARt: Painting with Holograms in Mixed Reality. In Proceedings of the 2017 CHI Conference Extended Abstracts on Human Factors in Computing Systems (CHI EA '17). ACM, New York, NY, USA.

Hernandez, J., McDuff, D., Benavides, X., **Amores, J.**, Maes, P., & Picard, R. (2014, June). AutoEmotive: bringing empathy to the driving experience to manage stress. In Proceedings of the 2014 companion publication on Designing interactive systems (pp. 53-56). ACM.

Amores, J., Benavides, X., & Maes, P. (2016, May). Psychicvr: Increasing mindfulness by using virtual reality and brain computer interfaces. In Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems (CHI EA '17). ACM.

Kan, V., Fujii, K., **Amores, J.**, Zhu Jin, C. L., Maes, P., & Ishii, H. (2015, January). Social textiles: Social affordances and ice-breaking interactions through wearable social messaging. In Proceedings of the Ninth International Conference on Tangible, Embedded, and Embodied Interaction (pp. 619-624). ACM.

Fusté, A., **Amores, J.**, Ha, D., Jongejan, J., & Pitaru, A. (2017). Paper cubes: evolving 3D characters in augmented reality using recurrent neural networks. In 2017 NeurIPS Workshop (Machine Learning for Creativity and Design).

Alvarez, D., **Amores, J.** (2017). The Emotional GAN: Priming Adversarial Generation of Art with Emotion. In 2017 NeurIPS Workshop (Machine Learning for Creativity and Design).

Amores, J.*, Benavides, X.*, & Maes, P. (2015, April). Showme: A remote collaboration system that supports immersive gestural communication. In Proceedings of the 33rd Annual ACM Conference Extended Abstracts on Human Factors in Computing Systems (pp. 1343-1348). ACM.

Kao, C. H. L.*, Dreshaj, E.*, **Amores, J.***, Leigh, S. W.*, Benavides, X.*, Maes, P., Perlin, K. & Ishii, H. (2015, January). Clayodor: Retrieving scents through the manipulation of malleable material. In 9th International Conference on Tangible, Embedded, and Embodied Interaction, TEI 2015 (pp. 697-702). Association for Computing Machinery, Inc.

Benavides, X.*, **Amores, J.***, & Maes, P. (2015, November). Remot-IO: a System for Reaching into the Environment of a Remote Collaborator. In Adjunct Proceedings of the 28th Annual ACM Symposium on User Interface Software & Technology (pp. 99-100). ACM.

Benavides, X.*, **Amores, J.***, & Maes, P. (2015, September). Invisibilia: revealing invisible data using augmented reality and internet connected devices. In Adjunct Proceedings of the 2015 ACM International Joint Conference on Pervasive and Ubiquitous Computing and Proceedings of the 2015 ACM International Symposium on Wearable Computers (pp. 341-344). ACM.

Amores, J.*, Benavides, X.*, Maes, P., 2015. TagMe: An Easy-to-Use Toolkit for Turning the Personal Environment into an Extended Communications Interface. In Proceedings of the 33rd Annual ACM Conference Extended Abstracts on Human Factors in Computing Systems (CHI EA '15). ACM, New York, NY, USA, 157-157.

Amores, J., Maes, P., & Paradiso, J. (2015, September). Bin-ary: detecting the state of organic trash to prevent insalubrity. In Adjunct Proceedings of the 2015 ACM International Joint Conference on Pervasive and Ubiquitous Computing and Proceedings of the 2015 ACM International Symposium on Wearable Computers (pp. 313-316). ACM.

Patents ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

Lanier, J., & **Amores, J.**. (2018). "Tactile interaction in virtual environments". U.S. Patent Application No. 15/395,513. Publication Date: 03/15/2018. Filing Date: 12/30/2016

Shapira, L., **Amores, J.** & Palos, X. B. (2018). "Attribute Detection Tools for Mixed Reality". U.S. Patent Application No. 15/867,494. Publication Date: 07/05/2018 Filing Date: 01/10/2018

Mentorship and Teaching ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

Research Mentor (MIT)   *Cambridge, U.S.A*

2019-21	**IIITD Visiting Student**, Nirmita Mehra. Bachelor thesis / project.	*9 months full-time*
2017-19	**MIT Undergrad**, Mae Dotan. 2 undergrad research projects, 2 peer-reviewed publications (EMBC'19, and another under submission) and one best demo award.	*2.5 years half-time*
2019	**MIT Undergrad**, Gabrield Fields. Undergrad research project.	*1.5 semesters half-time*
2018-19	**BITS Pilani Visiting Student**, Abhay Koushik. Bachelor thesis / project and 2 peer-reviewed publications (NeurIPS'18, BSN'19).	*9 months full-time*
2017-18	**MIT Undergrad**, Amanda Lowery. 1 undergrad research project.	*2 Sem. half-time*
2017-18	**MIT Undergrad**, Jessie Wang. Undergrad research project. Best demo award.	*3 Sem. half-time*
2017-18	**MIT Undergrad**, Xiqing Wang. First year undergrad research project and 1 peer-reviewed publication (EMBC'18).	*2 Sem. half-time*
2017	**Independent Designer**, Andrew Johnson. Typographic Emotions project.🔗	*Fall semester remote/half-time*
2017	**MRIU Visiting Student**, Neeraj Saini. Undergrad Internship.	*Spring Semester*
2016	**Boston University Visiting Student**, Yaqin Huang. Masters Internship.	*2 Sem. half-time*
2016	**MIT Undergrad**, Lucia Liu. Undergrad Research project.	*2 Sem. half-time*

Product Engineering Processes Mentor for Red Team (MIT)   *Cambridge, U.S.A*

PROVIDED GUIDANCE TO UNDERGRAD STUDENTS: 2.009 CLASS   *Fall 2019*

- A group of 20 students selected my research project as one of their top 4 out of 200 ideas to explore for their class.

Human Machine Symbiosis Instructor (MIT Media Lab) *Cambridge, U.S.A*
GRADUATE TEACHING ASSISTANT FOR PROFS. PATTIE MAES *Spring 2017*
- Organized class, reviewed assignments and gave lectures for a full-semester class at the Media Lab.
- Notable student projects: **Dormio Interfacing with Dreams**
- Quality of Teaching: Anonymous feedback from students; 1=Strongly Disagree, 7=Strongly Agree (7 is best):
  Stimulated my interest in the subject: 7. Displayed thorough knowledge of subject material: 7. Helped me learn: 7.

Organizer and Instructor Mobile VR Development (MIT) *Cambridge, U.S.A*
Winter 2017

- Organized and taught the first VR course at MIT during the Independent Activities Period.
- The course was a class about developing mobile VR were students submitted their final projects as part of a challenge sponsored by Google.

Talks & Presentations

Talk	**Mobile World Capital Barcelona**, Hack the Hospital.	*05/21*
Panel	**Imagination in Action @ MIT**, Empathy, Art, Education & Tech	*05/21*
Talk	**Simon Fraser University**, Computational Aging Research Lab	*04/21*
Talk	**MIT Open Learning**, Full STEAM Ahead Program	*12/20*
Panel	**ACM CHI Symposium**, Smell, Taste, & Temperature ⚭	*06/20*
Talk	**ACM CHI Virtual Talks**, Cambridge CHI Public Event for HCI Researchers. ⚭	*06/20*
Panel & Talk	**IEEE EMBS Workshop on Brain, Mind, and Body**, IEEE EMBS: Cognitive Neuroengineering for Health & Wellness ⚭	*12/19*
Talk	**International Sleep Replay Workshop**, Presenting sensory cues during sleep for targeted memory reactivation. Organized by Ken Paller, Penny Lewis and Björn Rasch.	*09/19*
Panel	**Swiss Society for Sleep Research, Sleep Medicine & Chronobiology**,	*06/19*
Talk	**MIT Imagination in Action**, Engineering Dreams: Wellbeing & Memory Enhancement ⚭	*04/19*
Talk	**Basque Culinary Center and Telefonica**, Think Gastronomy & Olfactory Interfaces ⚭	*04/19*
Poster	**McLean Hospital. Technology in Psychiatry Summit** ⚭, "Closing Gaps in Translation"	*11/18*
Exhibit	**Hanshan Art Museum**, Exhibition: Engineering Dreams Demo Video Showcase	*11/18 - 01/19*
Exhibit	**CAFA Art Museum**, Beijing Media Art Benniale ⚭	*09/18*
Exhibit	**ARS ELECTRONICA ~100,000 attendees**, Cocoon: Interfacing with the Sleeping Mind ⚭	*09/18*
Talk	**INK Talk** ⚭, Using The Power of The Unconscious Mind for Mindfulness and Wellbeing	*11/17*
Talk	**Cosmetic Executive Women Awards (CEW)**, Achiever Awards: Scent Innovator Talk	*09/17*
Talk	**ACM Conference on Human Factors in Computing Systems**, Selected Talk ⚭	*07/17*
Talk	**AR in Action** ⚭, HoloARt: Painting with Holograms in Mixed Reality	*03/17*
Talk	**MIT Hacking Arts**, The Future of Arts	*11/16*
Talk	**Boston University**, Image and Video Computing Seminar	*04/16*
Talk	**Harvard School of Design**, Augmenting Human Capabilities and Environments Using Mixed Reality	*03/16*
Panel	**Harvard Digital Futures Consortium**, Talk and Panelist: Prepare – Discover – Interact.	*02/16*
Exhibit	**Sonar Music Festival**, International Festival of Progressive Music and Multimedia Arts.	*07/14*

Service and Leadership

Reviewer
- **National Science Foundation (NSF)** 2021 Panel Reviewer
- **Association for Computing Machinery (ACM)**: CHI, UIST, CSCW, DIS, IMWUT Journal, Ubicomp, TEI, ISWC, MobileHCI, Augmented Human, ISS. Special Recognition for Outstanding Review (DIS 2018 and CHI 2021 Full Papers).
- **Institute of Electrical & Electronics Engineers (IEEE)**: VR, Sensors Journal, Journal of Biomedical and Health Informatics
- **Frontiers**: Psychiatry, Psychology. **Elsevier**: International Journal of Human-Computer Studies
- **Springer**: Journal on Multimodal User Interfaces, Virtual Reality (VIRE)

Co-President VR/AR @MIT *Cambridge, U.S.A*
CO-PRESIDENT, ORGANIZER *09/16 - 05/17*

Society of Women Engineers (SWE) *Cambridge, U.S.A*
MIT GRADUATE ADVISORY COMMITTEE *10/19 - 01/20*

Selected Press & Media

National Public Radio (NPR), To experience the metaverse, you have to smell it too🔗

The Scientist, The Technology Scientists Use to Engineer Dreams🔗

World Economic Forum, A new way to control experimentation with dreams 🔗

Techxplore, A lab that reads—and writes—our dreams🔗

Futurism, MIT Scientists Are Building Devices to Hack Your Dreams 🔗

El Pais - Second most circulated daily newspaper in Spain , Spanish article featuring my work and others at MIT🔗

Televisió de Catalunya - CCMA (TV3) - Catalan Public & National TV, No pot ser! (minute 34, TV interview) 🔗

Radio Television Española (RTVE) - National Radio & Spanish TV, "El Laboratorio del sueño" (live radio interview)🔗

Seeker: SCIENCE IN THE EXTREMES (126K views), These Sleep Engineers Could Help You Hack Your Dreams 🔗

IEEE Pervasive Computing, The Essence of Interfaces 🔗

MIT Sloan, Emotion AI, explained 🔗

Google, "Made By Women: AR Experiments" 🔗

RoadToVR, "5 Google ARCore Experiments That Inject Magic into Everyday Life" 🔗

Adafruit, "Invisible Highway with the Feather Bluetooth LE Mini Robot" 🔗

Fast Company, "MIT Gives Us Superpowers (Virtually)" 🔗

Prosthetic Knowledge, "Augmented Interfaces" 🔗

CNET, "Microsoft lab working on multiperson augmented reality" 🔗

MIT Technology Review, "Microsoft Researchers Are Working on Multi-Person Virtual Reality" 🔗

UploadVR, "Meet Jaron Lanier's newest HMD research project, the Reality Masher" 🔗

Tech Times, "Microsoft Lab Working On 'Comradre' Project For Shared Multi-User AR Experience" 🔗

CNN, "The social network that you can wear" 🔗

Fast Company, "MIT Invents A Social Network You Can Wear" 🔗

The Creators Project, "Wear Your Likes on Your Sleeve with These Social Textiles" 🔗

Design Boom, "Social textiles show icebreaking interaction through wearable messages" 🔗

CNN, "Feeling glum, happy, aroused? New technology can detect your mood." 🔗

Skills

Lead	**Mentor, Project Lead & Researcher**, Hands on experience conducting research and leading a team to develop olfactory wearables from research vision to manufacturing and shipping. Guided a team of multidisciplinary researchers that ranged from undergraduate students with Computer Science and Mechanical Engineering backgrounds to CS Master Students and doctoral candidates with industrial design expertise. Set the technical and creative direction to pursue a +4 years project.
Research	**Qualitative & Quantitative User Research, Rapid Prototyping, Academic writing**, Usability testing, user interviews and surveys, pilot studies and large-scale studies, lab, field and remote studies. Quantitative usability tests (time spent doing the task, success, etc.) as well as physiological analysis.
SW/HW	**AR/VR Developer**, Unity, Vuforia, ARCore, Hololens, VIVE, Oculus/Quest, Optitrack **Sensor & Data Integration**, Unity/Android to BLE & Wifi EE modules/wearables, OSC/TCP data streaming, signal processing. **Software Developer**, C#, Java, Python, C++, HTML, CSS **Mobile Developer**, Android, Unity **Machine Learning**, TensorFlow, TensorFlow Lite
Design	**User Experience (UX)**, Sketches and mockup videos, design thinking, paper prototyping **User Interface Design, Interaction Design**, Adobe Photoshop, Illustrator **Vision videos, mockups, futuristic concepts** , Adobe Premiere, After Effects **Fabrication**, Arduino, PCB design, Altium, 3D Printing, Lasercut, Vinyl Cutter **Arts & Crafts**, Knitting, Sewing, Crochet, Jewelry design, watercolor, acrylic, pottery
Clinical	**Magnetic Resonance Imaging (MRI)**, Certified by the Massachusetts General Hospital **Clinical Research, Clinical Trials**, IRB & FDA applications, Epic software
Comms	**Fluent in English. Spanish & Catalan native speaker**, novice in French