MARCELLO GIORDANO, PH.D.

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SUMMARY

I am a Human-Computer Interaction (HCI) researcher, and in my career I worked on groundbreaking technologies that are fundamentally changing the way we interact with computers. My experience spans across user research, statistical data analysis and modeling, interaction models and input algorithms in augmented and virtual reality. I am a competent programmer, and I thrive in stimulating environments where solving challenging problems is always on the agenda.

EXPERIENCE

Apple **Cupertino, CA, USA**

Research Scientist *August 2022 to Present*

At Apple, I am part of the Human Interface Devices (HID) group. I am responsible for researching new **interaction techniques**, designing **user studies**, and analyzing data to inform the design of current and next generations of Apple products.

Meta (Facebook) - Reality Labs Research **Toronto, Canada**

Research Scientist *July 2019 to June 2022*

At Reality Labs Research Toronto (previously Chatham Labs - acquired by Facebook in September 2020) I worked on developing **new interactions and experiences** that will enable users to interact with a smart, AI-powered ecosystem of **AR/VR** devices and applications. My research projects included: **modeling of user intent** to facilitate input, **haptic feedback design** for all-day wearable devices, and multimodal feedback and guidance for **gesture learning**.

Huawei Technologies **Toronto, Canada**

Human-Computer Interaction Researcher *March 2018 to July 2019*

At Huawei Technologies, I worked on designing new **haptic interactions for mobile and wearable devices**, as well as AI powered, **context aware applications** for wearables and smart-home.

Ultraleap Ltd **Bristol, UK**

Haptics Engineer *May 2016 to February 2018*

During my time at Ultraleap (formerly Ultrahaptics) I worked on designing of **haptic feedback and interactions** for mid-air haptic technology. My responsibilities included: **user evaluation** by means of qualitative and quantitative methods, **statistical data analysis**, physical measurements of vibrating structures and **data processing**.

SKILLS

- **Technical Skills**
  - Human-Computer Interaction
  - Statistical Data Analysis and Modeling
  - User Research, Quantitative and Qualitative Methods
  - Multimodal Interactions, Wearables, AR/VR
  - Haptic Technology and Haptic Experience Design
  - Python, R, C#, Unity
  - Digital Signal Processing (DSP), Laser Doppler Vibrobmetry (Polytec), Motion Capture Systems (Qualisys), Eye Tracking (Tobii)
- **Organization, communication, time management**
  - Self-driven, curious, able to work under pressure and in fast-paced teams
  - Excellent communication skills
  - Reliable, capable of meeting strict deadlines
- **Languages**
  - English (Fluent), French (Fluent), Italian (Native), Spanish (Intermediate)

EDUCATION

- **Ph.D**, Music Technology – Haptics, *McGill University (Montreal, Canada)*, 2016
  - Thesis: *Vibrotactile Feedback and Stimulation in Music Performance*
  - Advisor: Marcelo M. Wanderley
- **M.A**, Media Technology, *Grenoble Institute of Technology (Grenoble, France)*, 2010
- **M.Sc**, Mathematics and Applications, *Pierre and Marie Curie University (Paris, France)*, 2009
- **B.Sc**, Mathematics, *"Sapienza" University of Rome (Rome, Italy)*, 2008

SELECTED PUBLICATIONS

Chen, D. L., **Giordano, M**., Benko, H., Grossman, T., Santosa, S. - "GazeRayCursor: Facilitating Virtual Reality Target Selection by Blending Gaze and Controller Raycasting", *Proceedings of the 29th ACM Symposium on Virtual Reality Software and Technology* - 2023

Sidenmark L., Parent M., Wu C., Chan J., Glueck M., Wigdor D., Grossman T., **Giordano M.** - "Weighted Pointer: Error-aware Gaze-based Interaction through Fallback Modalities", *IEEE Transactions on Visualization and Computer Graphics* - 2022

Cheng T., Park J. W., Li J., Ramey C., Lin H., Abowd G. D., Medeiros C., Oh H., **Giordano M.** - "PITAS: Sensing and Actuating Embedded Robotic Sheet for Physical Information Communication", *Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems* - 2022

Ahn S., Santosa S., Parent M., Wigdor D., Grossman T., **Giordano M.** - "StickyPie: A Gaze-Based, Scale-Invariant Marking Menu Optimized for AR/VR", *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems* - 2021

Frier W., Ablart D., Chilles J., Long B., **Giordano M.**, Obrist M., Subramanian S. - "Using Spatiotemporal Modulation to Draw Tactile Patterns in Mid-Air" - *International Conference on Human Haptic Sensing and Touch Enabled Computer Applications* - 2018

Giordano M., Georgiou O., Dzidek B., Corenthy L., Kim J. R., Subramanian S., Brewster S. A. - "Mid-Air Haptics for Control Interfaces" - *Extended Abstracts of the CHI Conference on Human Factors in Computing Systems* - 2018

Tranchant P., Shiell M. M., **Giordano M.,** Nadeau A., Peretz I., Zatorre R. J. - "Feeling the beat: Bouncing Synchronization to Vibrotactile Music in Hearing and Early Deaf People" - *Frontiers in neuroscience* - 2017

Giordano M. , Wanderley M.M. - "Follow the Tactile Metronome: Vibrotactile Stimulation for Tempo Synchronization in Music Performance" - *Proc. of the Sound and Music Computing Conference (SMC)* - 2015

Giordano M., Hattwick I., Franco I, Egloff D., Frid E., Lamontagne V., Martinucci M., Salter C., Wanderley M.M. - "Design and Implementation of a Whole-Body Haptic Suit for “Ilinx”, a Multisensory Art Installation" - *Proc. of the Sound and Music Computing Conference (SMC)* - 2015

Giordano M., Wanderley M.M. - "Perceptual and Technological Issues in the Design of Vibrotactile-Augmented Interfaces for Music Technology and Media" - *Haptic and Audio Interaction Design (HAID) - Lecture Notes in Computer Science, Springer* - 2013

Giordano M., Sinclair S., Wanderley M.M. - "Bowing a vibration-enhanced force-feedback device" - *Proc. New Interfaces for Musical Expression Conference (NIME)* - 2012

SELECTED PATENTS

Zhang, T., Gupta, A., **Giordano, M.**, Jonker, T. R., Benko, H - "Systems and methods for communicating recognition-model uncertainty to users.", *U.S. Patent No. 11,789,544* - 2023

Henrikson, R., Grossman, T.S., Trowbridge, S.E., Benko, H., Wigdor, D.J., **Giordano, M.**, Glueck, M., Jonker, T.R., Gupta, A., Santosa, S. and Medeiros, C.B. - "Multimodal kinematic template matching and regression modeling for ray pointing prediction in virtual reality.", *U.S. Patent 11,656,693* - 2023

Giordano, M., Parent, M., Wigdor, D.J., Santosa, S., Grossman, T.S. and Sunggeun, A. - "Saccade-based positioning for radial user interface.", *U.S. Patent No. 11,449,138.* - 2022