ALI ISRAR, Ph.D.

Senior Technology & R&D Leader | Haptics, XR, Interactive Systems
Founder & Technical Director, ViiVAI Labs and Studio
📍 USA | 📧 aliisrar@hotmail.com | 📞 +1 832 419 4268
🔗 https://ali-israr.github.io/
🌐 linkedin.com/in/aliisrar

EXECUTIVE PROFILE

Technology executive, inventor, and R&D leader with **25+ years of experience** driving innovation at the intersection of **haptics, XR, sensing systems, and AI-enabled media**. Proven track record of **building and leading high-impact research and product teams**, translating deep science into **product-grade systems**, and delivering **differentiated user experiences** deployed at global scale.

Former Manager at **ByteDance, Meta (Reality Labs), and Disney Research**, with sustained success across **strategy formation, cross-functional execution, IP creation, and technology transfer**. Author of **100+ peer-reviewed publications** and inventor on **30+ granted U.S. patents**. Recognized thought leader with work featured by **CNN, MIT Technology Review, Wired, BBC, and Variety**.

CORE LEADERSHIP & DOMAIN EXPERTISE

- R&D Strategy & Technical Vision
- Team Building & Global Leadership (US / China)
- Product Innovation & Technology Transfer
- Haptics, Multisensory Interaction, XR (AR/VR/MR)
- Sensors, Wearables, Robotics, EMG, Biosignals
- Generative AI for Interactive Media
- Hardware–Software Co-Design
- IP Strategy, Patents & External Partnerships

PROFESSIONAL EXPERIENCE

ViiVAI Labs & Studio — USA

Founder & Technical Director | *2025 – Present*

- Founded and led a startup focused on **context-aware, generative haptic media systems**.
- Define **technical vision, product strategy, and partner roadmap** across hardware, software, and AI.
- Lead end-to-end development of **prototype platforms and demos** showcasing next-generation sensory experiences.
- Drive strategic collaborations, component selection, and system integration across media and sensing stacks.

ByteDance (PICO Labs) — USA / China

Director, Research & Development | Technical Program Lead | *2022 – 2024*

- **Founded and scaled** an agile R&D and product innovation team across the US and China.
- Led development of **core haptics, tactile sensing, EMG, and biosensor technologies** for **Generative AI and XR platforms (VR/AR/MR)**.
- Owned **technical strategy, execution milestones, and cross-functional alignment** with product, design, and leadership teams.
- Drove external partnerships and internal technology transfer, enabling **product-facing demonstrations and platform readiness**.

Meta Platforms (Reality Labs Research) — USA

Manager, Research Science | Haptics Program Lead | *2018 – 2022*

- Built and extended **core wearable and handheld haptics hardware/software platforms**.
- **Defined and led the Haptics Research Program**, managing multiple concurrent initiatives across AR/VR/XR.
- Oversaw development of **haptic interfaces, generative algorithms, test frameworks**, and evaluation tools.
- Led technology transfer efforts to product teams; quantified impact across **social, entertainment, and educational use cases**.
- Published extensively in top-tier venues (CHI, UIST, IEEE).

Facebook (Building 8) — USA

Manager, Technical Lead | *2017 – 2018*

- Led R&D programs in **haptics for communication and social touch**.
- Credited with the **"Hearing with Skin"** concept, catalyzing follow-on research across academia and industry.
- Managed academic collaborations, cross-functional initiatives, and **strategic patent portfolio development**.

Walt Disney Imagineering / Disney Research — USA

Senior Research Engineer | *2009 – 2017*

- Progressed from Postdoctoral Researcher to Senior Research Engineer.
- Led R&D for **haptics across rides, games, wearables, and immersive environments**.
- **Successfully deployed haptic systems** in flagship products, including:
  - *Avatar: Flight of Passage* (Disney World)
  - *MARVEL Vybe Haptic Gaming Pad* (Disney Consumer Products)
- Developed **distributed haptic playback tools**, wireless systems, and the **Feel Effects** haptic media library.
- Frequent presenter at **SIGGRAPH, SXSW, IEEE, ACM, FIPA**.
- Recipient of multiple **Best Paper and Best Demo Awards**.

Early Career & Academia

Rice University — Postdoctoral Research Scientist (2007–2009)
Purdue University — Research Assistant & Teaching Assistant (2001–2007)

EDUCATION

Ph.D., Mechanical Engineering — Purdue University, USA
Dissertation: *Tactual Transmission of Phonetic Features*
M.S., Mechanical Engineering — Purdue University, USA
B.S., Mechanical Engineering — University of Engineering & Technology, Pakistan

INTELLECTUAL PROPERTY & PUBLICATIONS

- **100+ peer-reviewed publications** (h-index: 42)
- **30+ granted U.S. patents**
- Publications in **Science, ACM CHI, SIGGRAPH, UIST, IEEE, ASME**

ADVISORY, PANELS & SERVICE

- Keynotes and invited talks at **SXSW, IEEE, ACM, ACE, MMSys, AsiaHaptics**
- Editorial Board: *IEEE Transactions on Haptics*

- Program Committees: **CHI, IEEE World Haptics, EuroHaptics**

Selected Publications

P. Preechayasomboon, A. Israr, & M. Samad, "Chasm: A Screw Based Expressive Compact Haptic Actuator," in *Proc. of the 2020 CHI Conference on Human Factors in Computing Systems (CHI'20)*, 2020. (**Honorable Mention**)

A. Israr, S. Zhao, Z. Schwemler, & A. Fritz, "Stereohaptics Toolkit for Dynamic Tactile Experiences," in *Proc of 21st International Conference on Human-Computer Interaction*. 2019. (**Best Paper Award**)

E. Pezent, A. Israr, M. Samad, S. Robinson, P. Agarwal, H. Benko, & N. Colonnese, "Tasbi: Multisensory Squeeze and Vibrotactile Wrist Haptics for Augmented and Virtual Reality," in *Proc. of the 2019 IEEE World Haptics Conference*.

A. Israr and F. Abnousi, *Towards Pleasant Touch: Vibrotactile Grids for Social Touch Interactions*, Late Breaking Work in 2018 CHI Conference on Human Factors in Computing Systems (CHI'18).

S. Zhao, A. Israr, F. Lau, F. Abnousi, *Coding Tactile Symbols for Phonemic Communication*, Proc. of the 2018 CHI Conference on Human Factors in Computing Systems (CHI'18).

O. Schneider, A. Israr, & Karon Maclean, *Tactile Animation by Direct Manipulation of Grid Displays*, Proc. of the 28th ACM Symposium on User Interface Software and Technology (UIST 2015), 2015.

Y. Ishiguro, A. Israr, A. Rothera, & E. Brockmeyer, *Uminari: Freeform Interactive Loudspeakers*, Proc. of the 2014 ACM International Conference on Interactive Tabletops and Surface (ITS 2014), 2014.

A. Israr, S. Zhao, K. Schwalje, R. Klatzky, & Jill Lehman, *Feel Effects: Enriching Storytelling with Haptic Feedback*, ACM Transactions on Applied Perception, 11(3) Article No. 11, 2014. (**Best Paper Award**)

S.C. Kim, A. Israr *& I. Poupyrev, Tactile Rendering of 3D Features on Touch Surfaces,* Proc. of the 26th ACM Symposium on User Interface Software and Technology (UIST 2013), 2013.

R. Sodhi, I. Poupyrev, M. Glisson, & A. Israr, *AIREAL: Interactive Tactile Experiences in Free Air*, ACM Transactions on Graphics (TOG) - SIGGRAPH 2013, 32(4) Article No. 134, 2013.

A. Israr & I. Poupyrev, *Tactile Brush: Drawing on Skin with Tactile Grid Display*, Proc. of the ACM CHI Conference on Human Factors in Computing Systems (CHI2011), pp. 2019-2028, 2011.

O. Bau, I. Poupyrev, A. Israr, & C. Harrison, *TeslaTouch: Electrovibration for Touch Surfaces*, Proc. of the User Interface Science & Technology (UIST2010), pp. 283-292, 2010.

A. Israr, P.H. Meckl, C.M. Reed, & H.Z. Tan, *Controller Design and Consonantal Contrast Coding using a Multi-finger Tactual Display*, The Journal of the Acoustical Society of America, 125(6), pp. 3925-3935, 2009.

J.C. Huegel, O. Celik, A. Israr, & M.K. O'Malley, *Expertise-Based Performance Measures in a Training Virtual Environment*, Presence: Teleoperators & Virtual Environments, 18(6), pp. 449-467, 2009.

G.R. Pennock and A. Israr, *Kinematic Analysis and Synthesis of an Adjustable Six-Bar Linkage*, Mechanism and Machine Theory, 44, pp. 306-323, 2009.

A. Israr, H.Z. Tan, & C.M. Reed, *Frequency and amplitude discrimination along the kinesthetic-cutaneous continuum in the presence of masking stimuli*, The Journal of the Acoustical Society of America, 120(5), pp. 2789-2800, 2006.

Research Publications and Patents

I am a published author of more than 100 research publications (h-index 39) at some of the most prestigious engineering and computer science conferences and journals, such as ACM SIGGRAPH, UIST, CHI, IEEE, ASME, Science. I am granted 30+ patents by USPTO.

Selected Press and Media

Hearing w/ Skin, Magic Bench:
MIT Technology Review "Getting e-mail on your skin is actually a thing now, thanks to Facebook" 4.2018
Variety "Disney Researchers Create Mixed-Reality 'Magic Bench' for Shared Experiences" 7.2017
Wired "Disney's 'Magic Bench' Fixes AR's Biggest Blind Spot" 8.2017

Feel Effects, Haptic Gaming Pad, Ride Seat:
NBC "Vybe Gaming Pad Moves You" 12.2012
Engadget "Vybe gaming pad packs Disney Research's Surround Haptics into a $99 … accessory" 12.2012
Phys "Researchers develop 'feel effect' vocabulary to tell stories with sense of touch" 8.2014
Phys "New software plug-in enables users to add haptic effects to games, media" 11.2014
VFXV "Avatar: Flight of Passage: A cinematic, multi-sensory 3D experience that soars" 6.2018

Tactile rendering, touch screens:
Discover Magazine "The Future of Tactile Touch Screens" 8.2015
BBC "Disney develops way to 'feel' touchscreen images" 10.2013
Washington Post "Disney invents touchscreen that lets you feel textures" 10.2013
Mashable "Disney Research Develops Tactile 3D Touchscreen" 10.2013

Project Aireal, free air haptic feedback:
Wired "Disney's Amazing Air Cannons Let You Touch the Digital World" 07.2013
Mashable "Device Puffs Virtual Objects Into Reality" 7.2013
The Independent "Disney's 'Aireal' system uses air vortexes to mimic touch" 7. 2013
CNN "'Feel' objects in thin air: The future of touch technology" 10.2013

Surround Haptics, scalable tactile displays for large surfaces:
New Scientist "Illusions to send shivers down a gamer's spine" 5.2011
Fast Company "Disney Reinvents The Vibrator ... For Sensational Movies And Gaming" 8.2011
Kotaku "One Day Games Will Caress, Smack You" 8.2011

Project TeslaTouch, tactile feedback for touch screens based on electrovibration:
MIT Technology Review "A Touch Screen with Texture" 10.2010
CNN "When glass touch screens feel like sandpaper" 10.2010
MSNBC "Feel the future: Touch screens that touch back" 12.2010

Awards

Best Demo Award for ***Tesla Touch for haptic interfaces*** at IEEE World Haptics Conference 2011.

Best Paper Award for ***Feel Effects: Enriching Storytelling with Haptic Feedback*** at ACM Symposium on Applied Perception, 2014.

Best Paper Award for ***Stereohaptics Toolkit for Dynamic Tactile Experiences*** in Human Interface and the Management of Information Thematic Area, in HCI International 2019.

Honorable Mention Award for ***Chasm: A Screw Based Expressive Compact Haptic Actuator*** in ACM Conference on Human Factors in Computing Systems 2020.

Best Paper Award for ***A Phonemic-Based Tactile Display for Speech Communication*** in IEEE Transaction on Haptics 2020.

Selected Panels & Invited Talks

The Next Interfaces - Sensory Gaming Platforms. Invited panel at Neurogaming 2013, May 1-3, San Francisco, USA.

Emerging Haptic Technologies. Invited talk at Access-board.gov quarterly meeting, July 9, 2013, Washington D. C., USA.

Fabrication Techniques @ Disney Research. Invited talk at American Manufacturing Summit Strategies (AMSS) 2013, October 22-24, 2013, Chicago, USA.

Haptics in Entertainment: Context without Content. Keynote talk at Advances in Computer Entertainment (ACE) 2013, November 13-15 2013, University of Twente, Enschede, The Netherlands.

Haptics Experience Design @ Disney. Invited talk at Workshop on HaXD - Haptic Experience Design. IEEE World Haptics Conference (WHC) 2015, June 22, Chicago, USA.

Sensory Illusions for Haptic Augmentations. Invited talk at Workshop on Haptics in Human Ability Augmentation. IEEE World Haptics Conference (WHC) 2015, Chicago, USA.

"Feel the Stories" Haptics Technologies for Mainstream Media. invited keynote for @fipa in January 2016.

Why We Crave Touch in Our Interactions with Tech. Invited panel at SXSW in Austin in March 2016.

StereoHaptics Toolkit. Invited talk at Art Center Los Angeles, October 2016.

Haptic IO in Social Communication, invited panel in Cross Cutting Challenges in IEEE Haptics Symposium, March 2020.

Challenges in Haptics Technologies to Enable XR Interactions, invited speaker at Intro to Haptics for XR: IROS 2020 Tutorial.

Haptic Media in XR Horizons, keynote speaker at ACM MMSys 2022 Athlone, Ireland.

Haptic Primitives and Hardware Technologies for Hand Based Interactions, invited speaker at Asia Haptics 2024.

Feeling the Data: Haptics as Information Media in Immersive Environments, invited speaker at IMMERSE Center for IMMERSIVE Computing: Nov 6 2025.

Technical Services

***Program Committee**, EuroHaptics Conference 2014, 2022; IEEE World Haptics Conference 2013, 2015, 2017, 2021; IEEE Haptics Symposium 2012, 2014; ACM Conference on Human Factors in Computing Systems 2016, 2017; International Workshop on Haptic and Audio Interface Design, 2009.*

***Editorial Board Member**, IEEE Transactions on Haptics; Presence: Teleoperators and Virtual Environments, Jury Member for General Submissions at SIGGRAPH 2016, ACM Games: Research and Practice*

***Chairs**, Student Innovation Challenge 2016 IEEE Haptics Symposium; Student Volunteer 2012 IEEE Haptics Symposium*

- ***Session Co-Chair,** 2013 IEEE World Haptics Conference, "Tactile Displays and Perception"*
- ***Organizing Committee Member**, 2012 IEEE Haptics Symposium (HAPTICS 2012)*
- ***Session Co-Chair,** 2012 IEEE Haptics Symposium, "Special Session on Human-Computer-Interaction"*
- ***Studio Co-Organizer**, ACM TEI 2012, "Designing Haptics"*
- ***Session Co-Chair,** ACM TEI 2012, "One Step Beyond"*

· ***Session Co-Chair**, ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conferences, "Planar Mechanisms: Analysis and Synthesis I" (2007)*