



Stefan Marti, Ph.D.

Vice President of Future Experience and AI

Dr. Marti is Vice President of Future Experience and Artificial Intelligence at HARMAN. He advances current and future User Experience (UX) across all HARMAN brands and divisions, and leads the Artificial Intelligence (AI) efforts across all divisions.

As a seasoned executive leader, Dr. Marti has 20 years of experience in corporate and academic environments, including MIT, Samsung, HP, and HARMAN. He has been awarded 50+ U.S. patents (globally 300 more are pending), and has published his work in international journals and conferences. He has an excellent track record of founding cross-functional, high-performing skunk works teams. Dr. Marti holds multiple degrees in computer science, engineering, and social sciences, including a Ph.D. from MIT.

At the core, Dr. Marti is a Human-Computer Interaction (HCI) research scientist, inventor, and visionary. He creates, researches, designs, develops, and patents systems for human augmentation (social, knowledge, emotion, etc.), autonomous vehicles (ground and air based), hearables and post-wearables, augmented reality (visual, auditory, haptic), non-traditional interaction methods (HCI and HMI), human-robot interaction, robotically augmented devices, aerial robotics and drones, non-verbal interaction, gestural and conversational systems, cognitive and affect sensing, neural sensing and stimulation.

“Reverse-engineering science fiction” is what he is passionate about. In order to do that, he creates new ideas, technologies, and opportunities. His strengths are "engineering creativity," and connecting the dots of research and emerging technologies to create radically new products and services. Although he constantly thinks about the future, rather than trying to predict it, he prefers to simply create it.

One of Dr. Marti’s core motivations is to enable Human Augmentation: to create technologies that directly enhance our bodies and minds, be it perceptually, cognitively, emotionally, and on many other levels. In order to do that, Dr. Marti studied the human psyche in depth for eight years, and then focused on the engineering side at MIT for another eight. He believes that in order to create technologies that enhance people and allow them to interact with technology more intuitively, we need to combine deep engineering and psychology knowledge, and all shades in between.

He received an M.S. and Ph.D. degree in Media Arts & Sciences from MIT, and an additional M.S. in Psychology, Philosophy, and Computer Science from the University of Berne, Switzerland. In a previous life, he was recording and live mixing engineer for Heavy Metal bands, and was touring all over Europe.

After joining HARMAN in 2012, made it his job to create future product opportunities for all HARMAN brands, existing and future. He has founded HARMAN's famous corporate Future Experience (FX) Team, located strategically in the Silicon Valley, in order to "future-proof" all UX at HARMAN. The group does top-down vision driven UX R&D, interaction design, and prototyping, and is the most forward looking innovation team in all of HARMAN. He also founded HARMAN's corporate AI Team, which evangelizes machine learning approaches across all functions and divisions, defines frameworks and best practices, and mentors all other AI efforts at HARMAN. Dr. Marti and his teams are part of HARMAN X, the corporate technology group, and he reports directly to the HARMAN CTO.

Some recent works that he has initiated and advanced with his teams include:

1. Auditory Augmented Reality: systems that enable super human hearing
2. Shape-Shifting Interfaces: controllers and surfaces which can subtly change their shape and texture to communicate on a semi-subconscious level
3. Cognitive Sensing Systems: real-time sensing of the brain's cognitive and emotional states by analyzing pupil diameter fluctuations, facial, and voice cues
4. Eye Gaze and Eye Vergence Sensing for controlling transparent displays and HUDs
5. Automotive Pseudo-Holographic Display Systems enabling full-interior AR
6. Bare Hand Gesture Control Of Sounds, in cars and on wearables
7. 3D Stereoscopic See-Through-Dash Display System with scene camera arrays
8. Ungrounded Force Actuators for wearable devices that can gently "nudge" a user
9. Wearable pointing based object recognition system, enabling casual omniscience

Prior to joining HARMAN, Stefan was with HP as the Director for Future Concepts and Prototyping at Palm, from 2011 to 2012. He led teams of end-to-end prototyping and research engineers, UI prototyping engineers, and UI production developers the WebOS Human Interface group. He created working systems of future interaction methods and contributed to strategic roadmaps across all of Palm/HP. His projects were in the fields of wand and pen input, mobile 3D interfaces, remote multi-touch interfaces, and more.

From 2005 to 2010, Stefan was project leader and principal researcher at Samsung R&D in San Jose, CA. He was affiliated with the secretive Samsung Advanced Institute of Technology (SAIT) in Korea, and was in charge of initiating and managing HCI research projects with his team of Ph.D. researchers. The goal was to envision, design, develop, and patent fundamentally novel user interface concepts, based on original research in the domains of ubiquitous computing, mobile communication, artificial intelligence, robotics, virtual worlds, and augmented reality.

From 1997 to 2005, Stefan was at the MIT Media Lab in Cambridge, MA, as a research assistant, and led research projects in the domain of speech interfaces and mobile communication, conversational and communication agents, embodied agents and animatronics, wireless sensor networks, and tangible interfaces. He supervised undergraduate researchers, and was in close contact with the lab's 150+ industrial sponsors, giving over 100 presentations, talks, and demonstrations.

Stefan won a Gold Award from the Industrial Design Society of America (IDSA) for Industrial Design Excellence, was a Motorola fellow (1999 - 2000) as well as AT&T fellow (1998 - 1999) during his time at MIT. His work has been published widely in the press and mass media, and a video of one of his projects became the most watched YouTube video on October 7, 2005, with an estimated 1.2 million viewings.