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Name: **Rita Singh**
Profession: Scientist
Designation: Research Professor
Address: Language Technologies Inst., School of Computer Science
Gates Hillman Center, Carnegie Mellon University
4902 Forbes Ave., Pittsburgh, PA 15213-3702, USA
Phone: (412) 268-9859; Email: rsingh@cs.cmu.edu
Web: http://mlsp.cs.cmu.edu/people/rsingh
Nationality: US citizen

SUMMARY: Dr. Rita Singh is a Research Professor at the Language Technologies Institute, School of Computer Science at Carnegie Mellon University (CMU) and a visiting Research Professor at the University of Pittsburgh in USA. She is the Director of the Center for Voice Intelligence and Security at CMU, and ISCA Distinguished Lecturer. She holds affiliate faculty positions at the Institute for Strategic Analysis and the Cyber Security & Privacy Institute (Cylab) at CMU, and is affiliated with the DHS Center of Excellence for Criminal Investigations & Network Analysis at George Mason University. Her academic career spans over two decades of research on a wide range of topics in speech and audio processing, multimedia forensics and cyber forensics. with pioneering contributions in developing the science of profiling humans from their voice, a sub-area of Artificial Intelligence and Voice Forensics. She has extensive patents and publications in these areas. Her current work is focused on creating multimedia AI systems with a wide range of capabilities including human profiling, and AGI systems accelerated by quantum computing. The technology pioneered by her group has led to three world firsts: In September 2018, her team created the world's first live voice-based profiling system, demonstrated live at the World Economic Forum in Tianjin, China. In 2019 her group also created the world's first instance of human voice – that of the artist Rembrandt – generated based on evidence from his facial self-portraits. This work was commissioned by Walter Thompson Inc., and backed by the Rijksmuseum in Holland and ING Bank of Europe. In 2020, her team built the technology that demonstrated and enabled the detection of Covid-19 from voice.

At CMU, she teaches multiple graduate level courses including Computational Forensics and AI, Generative AI, Multimedia Processing, Quantum Computing, Quantum Cryptography and Quantum Machine Learning. She is the author of the book "Profiling Humans from their Voice," published in June 2019 by Springer-Nature, Singapore. This book has been commercially downloaded thousands of times since September 2019.

Her work has appeared in hundreds of international media articles, radio, TV etc. and has drawn attention from various government, defense and civilian agencies worldwide, including government agencies in Washington, the DoD, Interpol, and members of the Special Operations Command (USSOCOM), US Secret Service, United Nations Inter-regional Crime and Justice Research Institute (UNICRI), police and intelligence agencies from multiple countries. It was featured as one of the main attractions at the World Economic Forum in Davos in January 2018, and was also prominently highlighted (in writing) in the first US Congressional hearing on Artificial Intelligence in 2016. She routinely assists US law enforcement agencies, including the US Coast Guard Investigative Service, the Department of Homeland Security, NCPTF, FBI and others, in analyzing voice evidence for federal crimes under active investigation. Her work has also been talked about in church sermons in USA, and is to appear in a historical Hollywood documentary in 2025.

At CMU, she also co-leads the Machine Learning for Signal Processing (MLSP) and Robust Speech Recognition research groups. She was the co-lead designer of Sphinx-4, one of the world's most popular open-source ASR systems over the last two decades until the advent of transformer-based AI systems. In the past, she has also been a long-term consultant for the Air Force Research Labs (AFRL) at the Wright Patterson Air Force Base, and for the R&D units of multiple major companies in USA, including Walt Disney Imagineering and Research, Google Research, Adobe Research, Mistsubishi Electric Research Labs etc. She has also served as a subject matter expert for the Department of Justice, US Govt. and served as expert witness in several legal cases involving voice technology.