

Doh-Suk Kim

Applied Research & Technology Leader

Redmond, WA, United States | [LinkedIn](#)

I am an applied research and technology leader with 28+ years of experience at the intersection of human perception, audio and speech processing, communications, and AI.

My work has focused on a fundamental challenge: how do we measure complex audio and communication systems in ways that reflect human experience - and translate those measurements into better technologies, products, and engineering decisions.

Throughout my career at Microsoft, Dolby, Typecast, Huawei, Bell Labs/Alcatel-Lucent, and Samsung, I have developed perceptually grounded evaluation methodologies, objective quality models, benchmarking frameworks, and advanced audio and communications technologies. My expertise spans psychoacoustics, speech/audio quality, real-time communications, spatial audio, speech enhancement, echo suppression, QoE, and ML-based perceptual modeling.

____Current focus - Audio Systems and Voice AI Evaluation:____

At Microsoft, I am developing automated audio-quality evaluation and root-cause-analysis frameworks for Windows and emerging device experiences. My work connects system-level measurements and perceptual KPIs to engineering decisions and hardware/OEM roadmaps. I am also exploring how upstream acoustic and speech-processing degradations propagate into downstream LLM-based voice-agent responses and overall interaction quality.

____Research and Technical Leadership:____

I have spent more than 15 years leading multidisciplinary research and engineering initiatives, including research teams, technology roadmaps, perceptual benchmarking, and the translation of advanced research into practical products and platforms.

My contributions include:

- 60+ publications and standards contributions in audio, speech, perception, and communications.
- 20+ patents spanning speech/audio quality, perceptual processing, and communications technologies.
- Significant contributions to ITU-T and ANSI standards, including non-intrusive speech-quality assessment and multi-party conferencing evaluation.
- Leadership in subjective and objective evaluation, perceptual modeling, and technology benchmarking.

____Looking Ahead____

I am particularly interested in the convergence of perceptual science, real-time voice systems, and multimodal AI - where measuring human experience and downstream task performance can play a central role in building more reliable, natural, and effective AI-powered systems.

EXPERIENCE

Audio Microsoft Developing advanced audio-system evaluation methodologies and automated analysis frameworks for Windows and emerging AI-powered device experiences. - Developed an automated Windows audio-quality evaluation framework integrating scenario-driven testing, objective and perceptual metrics, and system-level diagnostics. - Developed automated root-cause-analysis capabilities for Project Solara agent devices, reducing evaluation failure rates by more than 10x. - Investigate end-to-end voice AI quality, including how upstream acoustic and speech-processing degradations propagate through downstream LLM-based agent responses. - Collaborate across engineering, hardware, and product teams to improve the reliability, scalability, and diagnostic value of audio-system evaluation.	Jun 2025 — Present
Career Break Unknown Travelling	Apr 2025 — Jun 2025
Advisory Consultant VP of Engineering Typecast - Spearheaded the AI research team to design and manage a data pipeline for training advanced voice generation AI models, ensuring efficiency and scalability. - Led the engineering team in developing a web-based platform for remote subjective testing, enabling efficient AI model performance evaluation. - Led the development of subjective and objective evaluation pipelines for AI voice models, achieving 50% cost reduction and 80% improvement in the audio performance assurance process timeline.	Feb 2024 — Mar 2025 <i>San Francisco Bay Area</i>
Director of Advanced Media Systems Director of Advanced Performance Measurements Dolby Laboratories Dolby Voice spatial audio-video conferencing & Perception-based personalized video streaming - Led defensibility strategy and cross-organizational projects to benchmark Dolby Voice against competitive audio conferencing devices and systems, resulting in the development of systematic performance management framework and	Jan 2012 — Oct 2023 <i>Sunnyvale, CA</i>

white papers demonstrating quantitatively articulated competitive marketing advantages.

- Managed and mentored a team of researchers, overseeing project resourcing and career development.
- Drove development of subjective and objective methods for measuring the performance of multi-party and spatial audio-video conferencing, resulting in the adoption of 3 new standard recommendations ITU-T Rec. P.340 Annex B (objective method), ITU-T Rec. P.1311 and P.1312 (subjective methods).
- Drove the development of in-service live conference performance measurement models tailored to perceptual KPI's, enabling efficient monitoring of commercial Dolby Voice live traffic for multiple years.
- Led research in personalized adaptive media streaming optimization, achieving 30-70% bandwidth savings through innovative sensorless and sensor-based user space understanding.

Principal Engineer / QoE group leader

Jan 2010 — Jan 2012

Huawei Technologies (USA)

Santa Clara, CA

Built QoE team to lead research and standardization activities related to ITU-T SG12. Developed objective models for narrowband/wideband/super-wideband speech quality assessment.

Member of Technical Staff | Distinguished Member of Technical Staff

Jan 2001 — Jan 2010

Alcatel-Lucent

New Jersey

Developed ML-based objective speech quality assessment models and drove ITU-T and ANSI standardization activities.

Member of Technical Staff

Jan 1998 — Jan 2001

Samsung Advanced Institute of Technology

- Invented perceptual phase quantization in acoustic signals and contributed to the development of 4 kbps speech coders for the ITU-T G.4k standardization.
- Managed signal processing team.
- Represented Samsung Electronics at the ITU-T Study Group 16 for speech codec standardization.

Post-doctoral Member of Technical Staff

Jan 1997 — Jan 1998

Bell Laboratories

- Developed objective assessment of speech quality and its application to speech coding.

EDUCATION

Korea Advanced Institute of Science and Technology

Ph.D. in Electrical Engineering

Korea Advanced Institute of Science and Technology

M.Sc. in Electrical Engineering

Hanyang University

B.Sc. in Electronics Engineering

CERTIFICATIONS

Hybrid Images for Personalized Media Streaming Optimization,

Objective test method for measuring the performance of conference phones using real speech signals in multiple-talker scenarios - An experiment in reverberant conditions,

A proposal for objective method to measure the performance of conference phones using real speech signals for multiple talker scenarios,

Objective performance measurement method for multi-talker scenarios using real speech signals,

Objective test methods for multi-talker scenarios,

Performance measurement result of a conference phone in accordance with the proposed Annex B of ITU-T Recommendation P.340,

How to evaluate spatial audio advantage in multi-party teleconferencing?,

Proposed new work item - P.SPELQ (Single-ended Perceptual Evaluation of Listening Quality),

Estimating the speech output quality of telephone services using single-ended prediction models,

Quality Estimation for Transmitted Synthesized Speech with Single-Ended Models: Comparison of Step 1 Results,

ANIQUE+: A new American National Standard for non-intrusive estimation of narrowband speech quality,

Auditory Non-Intrusive Quality Estimation Plus (ANIQUE+) Perceptual Model for Non-Intrusive Estimation of Narrowband Speech Quality,

Objective assessment of speech and audio quality – technology and applications,

ANIQUE+: non-intrusive speech quality assessment model,

ANIQUE: An auditory model for single-ended speech quality estimation,

A cue for objective speech quality estimation in temporal envelope representations,

ANIQUE: Lucent Technologies' candidate algorithm for ITU-T single-ended speech quality assessment model,

Perceptual phase quantization of speech,

Enhancement of noisy speech by using improved global soft decision,

On the perceptually irrelevant phase information in sinusoidal representation of speech,

SKILLS

Voice AI · Speech & Audio Processing · Auditory & Visual Perception · QoE (Quality of Experience) · Speech and Audio Processing · Machine Learning · ITU-T Standards · Auditory Perception · Visual Perception · Audio Conferencing · Video Conferencing · Echo Cancellation · Digital Signal Processors · Streaming Media · Python (Programming Language) · MATLAB · Project Management · Team Leadership · Team Building · Cross-functional Team Leadership · Cross-team Collaboration · Auditory Processing · Signal Processing · Psychoacoustics · QoE · VoIP · R&D · Project Planning · Strategic Planning · Speech Processing · Data Analysis · Speech Perception · Algorithms · Embedded Systems · Digital Signal Processing · System Architecture · Strategy · Embedded Software · Jira · Root Cause · Project Management Software · Debugging · LTE · Matlab · C