Redefining MRI:
From Image to Insight

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AI Vendor Session

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AI Innovations for Smart and Sustainable MR

Nitish Katoch

Philips Korea, Korea

Artificial intelligence is reshaping MRI across the full clinical pathway, from image acquisition and reconstruction to interpretation and workflow integration. Current innovations are increasingly centered around four essential pillars of MRI practice: image quality, acquisition speed, workflow simplification, and diagnostic confidence through intelligent automation. In this presentation, we will highlight Philips AI innovations across these pillars and show their role in enabling faster, smarter, and more sustainable MRI.

The talk will focus on recent advances in AI powered acquisition, reconstruction, and super resolution, with emphasis on Philips SmartSpeed Precise. SmartSpeed Precise introduces a Dual AI reconstruction approach that combines Adaptive-CS-Net for noise and undersampling artifact suppression with Precise-Net for Gibbs ringing reduction and super-resolution. This integrated approach enables up to 80% higher image sharpness compared with conventional Philips SENSE or Compressed SENSE imaging, while increasing imaging speed by up to a factor of 3. It is designed for broad clinical use across anatomical areas, contrast types, and orientations of 2D Cartesian scans, and is available across Philips 1.5T and 3.0T MR systems. Clinical examples will demonstrate how SmartSpeed Precise improves image quality and reduces scan time. We will also discuss the extension of AI driven reconstruction across 2D and 3D imaging, diffusion MRI, non-cartesian imaging, and cardiac MRI. In addition, SmartQuant Precise will be introduced as an AI enabled approach for fast and efficient quantitative and synthetic imaging. Representative clinical cases will show how these technologies improve image consistency, accelerate examinations, reduce workflow burden, and support more confident diagnosis across different clinical applications.

Finally, the presentation will look toward the next phase of AI in MRI, including the emerging role of generative AI and large language models. Brief examples will include cardiac foundation models for biomarker extraction, disease classification, and structured reporting, as well as generative MR foundation models for image preview. These developments suggest a future in which MRI systems can support more intelligent scanner interaction, personalized examination workflows, automated reporting assistance, and more sustainable clinical operations.