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## 강연제목: 초고해상도 초음파 영상을 위한 심화 기법 Advanced Techniques for Super-Resolution Ultrasound Imaging

**Abstract:** Super-resolution ultrasound imaging (SRUS), also known as ultrasound localization microscopy (ULM), has emerged as a promising modality for visualizing microvascular structures beyond the diffraction limit of ultrasound. This presentation introduces innovative approaches in SRUS, including high-density microbubble uncoupling techniques based on compressed sensing algorithms and transmit sequence adjustments during excitation to enhance imaging rates and spatial resolution. Furthermore, deep learning-based structured illumination microscopy (DL-uSIM) is presented as an advanced solution for contrast agent-free SRUS imaging. These advancements aim to overcome the limitations of conventional ULM imaging by achieving higher resolution, improved contrast, and faster processing times. Experimental results from in situ and in vivo studies will be discussed, demonstrating the potential of these techniques for biomedical applications such as tumor angiogenesis analysis, vascular assessment, and diagnostic imaging.

## **Brief Biosketch**

- Assistatn Professor: Kangnam University, Yongin-si, S. Korea, (Apr. 2022 present)
- **Postdoctoral Research Associate**: University of Illinois Urbana-Champaign, Champaign, IL, USA, (Jan. 2021 Mar. 2022)
- **Postdoctoral Research Associate**: University of Notre Dame, Notre Dame, IN, USA, (Aug. 2019 Dec. 2020)
- **Ph.D.** in Information & Communication Engineering, Daegu Gyeongbuk Institute of Science & Technology (DGIST), Daegu, S. Korea, (2015.03-2019.08)