

# EEI-Kolloquium

## Socially Pertinent Robots in Gerontological Healthcare: The Audio Pipeline

**Prof. Sharon Gannot**

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**Montag, der 23.02.2026 um 14:00 Uhr**

Seminarraum 05.025, Cauerstr. 7, 91058 Erlangen.

**Abstract:** Social robots are expected to operate autonomously in noisy, multi-user public spaces, yet robust multimodal interaction remains challenging. Many previous deployments relied on Wizard-of-Oz control or were limited to stationary or single-user scenarios. In the EU H2020 SPRING project, we developed a software package that enables social robots to operate autonomously in complex, unstructured environments. The system was deployed on the humanoid ARI robot and validated in real public settings, specifically, a gerontology hospital. This talk presents the audio pipeline supporting multi-party interaction. It integrates multichannel noise reduction, DOA estimation, adaptive beamforming, concurrent speaker separation, enrollment-based speaker extraction, speaker identification, and audio-visual speaker detection. I will conclude the talk with results from real deployments, demonstrating perceived usefulness and acceptance when robustness and adaptability are maintained.

Project page: <https://spring-h2020.eu/>

**Bio:** Sharon Gannot is a Full Professor and Vice Dean at Bar-Ilan University, where he heads the Data Science Program. He received his Ph.D. from Tel-Aviv University. His research focuses on statistical signal processing and machine learning for speech and audio, and he has authored over 350 publications. He is Editor-in-Chief of Speech Communication and leads the IEEE-SPS Data Science Initiative. His honors include multiple best-paper awards, the EURASIP Technical Achievement Award, and IEEE Fellow.