Dr. Nehorai graduated 33 Ph.D. students of whom 11 are faculty members, 2 are in government research labs, and 19 in industry (including 5 in finances, and 2 in start-ups). Recent employers include Google, Facebook, Oracle, Walmart Labs, and Exploratory start-up.

Research themes: We develop models of complex systems, use statistical signal processing, machine learning, imaging, and optimization to analyze data and solve important societal problems.

Network Science

- **Community detection**: Identification of mesoscale structures that drive the behavior of complex systems.
  **Student**: Zhenqi Lu.

- **Graph classification**: Quantification of the similarity between graphs.
  **Student**: Zhen Zhang.

Biomedical imaging: Estimation of source current density during uterine contractions.

**Healthcare Management**

- **Hospital readmission**: Development of machine learning models for readmissions risk based on patient data, and determining optimal treatment strategies for high risk patients.
  **Student**: Eric Cawi.

Sensing and Radar

- **Array processing**: Statistical performance analysis of co-prime arrays for finding more sources than sensors.
  **Student**: Yijian Xiang.

- **Cognitive radar networks**:
  - Active recursive Bayesian estimation for dynamic target tracking.
  - Adaptive detection for targets in the nonstationary environments.
  **Student**: Yijian Xiang.

- **Synthetic aperture radar**: Image reconstruction.

Source: horizon-magazine.eu

Health Monitoring

- **Parkinson disease**: Modeling, detecting, and tracking of freezing of gait in Parkinson disease.

- **Alzheimer disease**: Sleep and EEG biomarkers of Alzheimer disease.
  **Student**: Bing Xue, Sicheng Wang.

Multi-Media Data Analysis

- **Machine learning**: Transfer learning, image classification, and network structure analysis.
  **Student**: Zhen Zhang.

Entrepreneurship Opportunities

**Examples**: Biomedical imaging, health care management, and remote health monitoring.

**Best Student Paper Awards**

- Zhao Tan, IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing, 2013.

Group Photo