ESoA OFFSHORE EDITION - CHINA

Compressive Sensing as applied to Electromagnetics

Acquire Advanced Theoretical and Practical Knowledge in Compressive Sensing in 4 Days

Compressive sensing (CS) is a fundamentally interdisciplinary topic, with interplay between applied/pure mathematics and engineering serving to fertilize new researches opening new frontiers. The impact of CS goes far beyond compression and classical signal processing. Whenever acquiring/inverting data/information is difficult, dangerous, or expensive, CS allows to proceed with much less data/information than previously thought possible. Such a possibility has been rapidly exploited in several and different ranges of practical electromagnetic problems almost always leading to striking results that significantly advance the state-of-the-art.

Day 1: CS Introduction and Theoretical Basis
Day 2: Applications of CS in Antenna Design and Engineering
Day 3: Applications of CS in Inverse Problems and Imaging
Day 4: Further Issues & Advanced Topics in CS

This course, after reviewing basics and fundamentals of CS, will focus on state-of-the-art and most recently introduced CS-based techniques and algorithms, discussing capabilities, limitations, and perspectives in the following topics: Antenna Synthesis and Design, Antenna Measurements, Adaptive Antennas & Antenna Signal Processing, Inverse Scattering and Microwave Imaging. Applicative examples including exercises and talks regarding specific applications will corroborate the developed concepts.

Who Should Attend?

The course is intended for PhD students, Researchers, Scientists, and Engineers who are willing (a) to learn about the basics of compressive sensing, (b) to enhance their background on compressive sensing as well as electromagnetics applications "suitable" for CS exploitation, (c) to know about the leading edge and more recent advances on CS algorithms, and (d) to take an overview on the applications of CS techniques to the academic, industrial, and civil frameworks.

Teachers

- **Prof. Andrea MASSA**, ELEDIA Research Center (ELEDIA@UniTN), University of Trento, Italy; DIGITEO Chair, CentraleSupélec, France; Cátedra de Excelencia UC3M-Santander, Universidad Carlos III de Madrid, Spain
- **Prof. Tommaso ISERNIA**, LEMMA Group, Università Mediterranea di Reggio Calabria, Italy
- **Prof. Marco Donald MIGLIORE**, ELEDIA Research Center (ELEDIA@UniCAS), Università di Cassino e del Lazio Meridionale, Italy
- **Prof. Giacomo OLIVERI**, ELEDIA Research Center (ELEDIA@UniTN), University of Trento, Italy; ELEDIA Research Center (ELEDIA@L2S), CentraleSupélec, France

Date and Location
October 10-13, 2017, Tsinghua University Campus
1 Tsinghua Yuan, Haidian District, Beijing 100084, China

Prerequisites
Basics of Mathematical Analysis, Electromagnetics, and Antenna Theory

Course Coordinators
- Prof. Andrea MASSA
  ELEDIA Research Center HQ, Trento, Italy
- Prof. Tommaso ISERNIA
  LEMMA Group, Reggio Calabria, Italy

Registration Fees*
- Non-profit Institutions: 120 € - 930 ¥
- For-profit Institutions: 400 € - 3100 ¥
- Fee waiver for students from Chinese Universities

Maximum Capacity
80 attendees

REGISTER at:
http://edu.eledia.org/courses/esoa-2017-tsinghua

Event Coordinators at Tsinghua University:
- Prof. Fan YANG fan_yang@tsinghua.edu.cn
- Prof. Maokun LI maokunli@tsinghua.edu.cn

* Accommodations are NOT included.