



S3P-2024 Summer School on Signal Processing

Understanding and modeling the world around us - Sept. 23-27, 2024 @ Capri, Italy



IEEE-EURASIP Summer School on Signal Processing (S3P-2024)

FINAL REPORT

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1. Introduction

The 2024 IEEE-EURASIP Summer School on Signal Processing (S3P-2024) was the 10th edition of a successful series organized by the IEEE SPS Italy Chapter, with the sponsorship of both IEEE (Signal Processing Society) and EURASIP. This 10th edition was organized in Capri (I) by Prof. Giovanni Poggi and Prof. Luisa Verdoliva of the University Federico II of Naples (I). The main theme, "Understanding and modeling the world around us", was chosen considering the strong interest for methods and tools that allow one to faithfully represent and simulate various multimedia scenarios. Most of the speakers were invited because of their research interest and recent contributions on this topic, and lectures covered both theoretical and applicative aspects, with special emphasis on the interactions between signal processing and deep learning-based methodologies. Eventually, an outstanding set of speakers gathered in the school, coming from such diverse fields as signal, image, and speech processing, computer vision, and machine learning, and contributed to its success.

The school received more than 110 applications, but only 64 participants were eventually selected, based on their CVs, due to logistic constraints. The registration fees included meals and social events. Despite the venue (Capri is a top tourist destination) and the timing (high season) the fees were kept extremely low, thanks to the support of EURASIP, IEEE, and the Federico II University of Naples, and thanks to the intense effort devoted to the local organization. Final interviews proved a very high appreciation of the attendees, most of whom expressed high interest in a follow-up event.

2. Program

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday		
08:30 - 09:00							08:30 - 09:00	
09:00 - 09:30						Verdoliva	09:00 - 09:30	
09:30 - 10:00		Gori	Essa	Virtanen	Soatto		09:30 - 10:00	
10:00 - 10:30							10:00 - 10:30	
10:30 - 11:00		coffee break	coffee break	coffee break	coffee break	coffee break	10:30 - 11:00	
11:00 - 11:30							11:00 - 11:30	
11:30 - 12:00		Gori	Essa	Virtanen	Soatto	De Mello	11:30 - 12:00	
12:00 - 12:30							12:00 - 12:30	
12:30 - 13:00		lunch	lunch	lunch	lunch		12:30 - 13:00	
13:00 - 13:30						Test	13:00 - 13:30	
13:30 - 14:00							13:30 - 14:00	
14:00 - 14:30						lunch	14:00 - 14:30	
14:30 - 15:00	registration	Niessner	Dai	social event	Efros		14:30 - 15:00	
15:00 - 15:30								15:00 - 15:30
15:30 - 16:00		coffee break	coffee break		coffee break			15:30 - 16:00
16:00 - 16:30		poster session	oral student presentation					16:00 - 16:30
16:30 - 17:00							16:30 - 17:00	
17:00 - 17:30							17:00 - 17:30	
17:30 - 18:00							17:30 - 18:00	
18:00 - 18:30							18:00 - 18:30	
18:30 - 19:30	welcome party						18:30 - 19:30	
19:30 -					farewell dinner		19:30 -	

The technical program spanned from the 23rd to the 27th of September, including the following lectures

- [Angela Dai](#) (Technical University of Munich, Germany)
Learning to Understand the 3D World
- [Shalini De Mello](#) (NVIDIA Research, USA)
AI-Mediated Reality: From Synthesis To Verification
- [Alexei \(Alyosha\) Efros](#) (University of California, Berkeley, USA)
Algorithms vs Data: what's more important?
- [Irfan Essa](#) (Georgia Institute of Technology and Google, USA)
Generative Video: New Models, Applications and Challenges
- [Marco Gori](#) (University of Siena, Italy)
Collectionless machine learning
- [Matthias Nießner](#) (Technical University of Munich, Germany)
Photo-realistic AI Avatars
- [Stefano Soatto](#) (University of California Los Angeles, USA)
Representation Learning for Concepts and Meanings: From Inductive Learning of Signals to Reasoning about the World
- [Luisa Verdoliva](#) (University Federico II of Napoli, Italy)
Synthetic Media Verification in the Era of Generative AI
- [Tuomas Virtanen](#) (University of Tampere, Finland)
Computational analysis of everyday acoustic scenes: methods, data, and evaluation

Besides the talks, there was a poster session, an oral student presentation session, and the final exam session for accreditation.

3. Local Organization

All lectures were given in the main room of the Multimedia Center Mario Cacace of the municipality of Anacapri, equipped with a large video-wall and audio recording facilities. The room can hold no more than 72 people, which was the main reason for limiting the number of attendees. The Multimedia Center offers also other facilities, including computer rooms with high-speed Internet access, and a large space in the open, which has been used for the welcome reception, the coffee breaks, and the poster session.

The attendees were hosted in double and triple rooms in several small partners hotels at a short walking distance from the school venue. All the speakers were hosted at the San Michele hotel, also at a short walking distance from the school.

All lunches were included in the registration fee as well as the welcome reception buffet and the social dinners. The farewell dinner (Thursday) at the top-level Le Zagara restaurant, in a lemon orchard. Most of the dishes were from the Italian tradition.

The social event (Wednesday) was a guided tour of the island of Capri.

In the final IEEE-SPS feedback questionnaire the overwhelming majority indicated a very high appreciation of the organization.



View of Capri with the "Faraglioni" from mount Solaro.