

Preface

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This volume contains selected papers within the workshop IEEE SDS'23: Data Science Techniques for Datasets on Mental and Neurodegenerative Disorders, which was held in Zürich, Switzerland, the 22nd June 2023.

The workshop was held in hybrid mode both in person and online. We had 36 in person participants and 28 online participants. For the call for papers, we received 10 papers and we accepted 5 of them. The accepted papers are all regular papers explaining a technical solution or problems related to Mental disorders, neurodegenerative diseases and in general AI applied to healthcare.

The link of the workshop on the main conference website is <https://sds2023.ch/data-science-techniques-for-data-sets> as well as <https://www.datasciencetechniques.com/home>

1. The Workshop on Data Science Techniques for Datasets on Mental and Neurodegenerative Disorders

The workshop on Data Science Techniques for Datasets on Mental and Neurodegenerative Disorders (DS Techniques for Datasets on MDs and NDs) provided an excellent discussion of data science techniques for biomedical datasets related to mental and neurodegenerative disorders. The goal of this workshop was to allow mental health researchers to expand their knowledge of advanced data science techniques while enabling data scientists to improve their methods with feedback from clinical audiences.

2. The numbers of the workshop

The workshop's organizers Vincenzo Dentamaro, Lauren Erdman and Mahboobeh Parsapoor (Mah Parsa) made efforts to organize the workshop in order to give an in-depth discussion of data science techniques applied to data sets relevant to mental and neurodegenerative illnesses mental health researchers with broaden their knowledge of advanced data science approaches. They aimed to offer data scientists to enhance their methods with input from clinical audiences. The workshop included practical examples and case studies on areas such as artificial intelligence, machine learning, computer vision, natural language processing, and bioinformatics.

Speakers:

1. Dr. Giulia Da Poian who presented her work titled "From Data Streams to Precision Outcomes: Expanding Mental Health Research with Data Science and Passive Sensor Data"
2. Dr. Sarah Brüningk who presented her work titled "Harnessing clinical hallmarks for Alzheimer's Disease detection on MRIs"
3. Dr. Jenny Yu who presented her work titled "Maternal Childhood Adversity's Impact on Dynamic Mental Health During Pregnancy: A Causal Approach"

presented their research works in the field of AI and mental and neurodegenerative disorders. The talks followed by an expert panel discussion with in person and online participants. Panelists discussed deepening the problems of artificial intelligence applied to healthcare and the need for explainable artificial intelligence techniques as well as current challenges and actual research directions.

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This is the first version of this workshop and we plan to make the next year.

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3. Acknowledgments

We thank the organization of the IEEE Swiss Conference on Data Science 2023 for supporting us to organize the workshop and for hosting it in their amazing location in Zürich, Switzerland.

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