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**7th INTERNATIONAL SCHOOL ON BIG DATA**

**BigDat 2021 Autumn**

**Beersheba, Israel**

**October 10-14, 2021**

Co-organized by:

Ben-Gurion University of the Negev  
Department of Software and Information Systems Engineering  
Data Science Research Center

Institute for Research Development, Training and Advice - IRDTA  
Brussels/London

<https://irdta.eu/bigdat2021a/>

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--- Early registration deadline: July 5, 2021 ---

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**SCOPE:**

BigDat 2021 Autumn will be a research training event with a global scope aiming at updating participants on the most recent advances in the critical and fast developing area of big data. Previous events were held in Tarragona, Bilbao, Bari, Timișoara, Cambridge and Ancona.

Big data is a broad field covering a large spectrum of current exciting research and industrial innovation with an extraordinary potential for a huge impact on scientific discoveries, medicine, engineering, business models, and society itself. Renowned academics and industry pioneers will lecture and share their views with the audience.

Most big data subareas will be displayed, namely foundations, infrastructure, management, search and mining, security and privacy, and applications (to biological and health sciences, to business, finance and transportation, to online social networks, etc.). Major challenges of analytics, management and storage of big data will be identified through 23 four-hour and a half courses and 3 keynote lectures, which will tackle the most active and promising topics. The organizers are convinced that outstanding speakers will attract the brightest and most motivated students. Interaction will be a main component of the event.

An open session will give participants the opportunity to present their own work in progress in 5 minutes. Moreover, there will be two special sessions with industrial and recruitment profiles.

**ADDRESSED TO:**

Master's students, PhD students, postdocs, and industry practitioners will be typical profiles of participants. However, there are no formal pre-requisites for attendance in terms of academic degrees. Since there will be a variety of levels, specific knowledge background may be assumed for some of the courses. Overall, BigDat 2021 Autumn is addressed to students, researchers and practitioners who want to keep themselves updated about recent developments and future trends. All will surely find it fruitful to listen and discuss with major researchers, industry leaders and innovators.

**VENUE:**

BigDat 2021 Autumn will take place in Beersheba, the largest city in the Negev desert of southern Israel and an important technology center. The venue will be:

Ben-Gurion University of the Negev  
Marcus Family Campus

<https://in.bgu.ac.il/en/Pages/interactive.aspx>

**STRUCTURE:**

3 courses will run in parallel during the whole event. Participants will be able to freely choose the courses they wish to attend as well as to move from one to another.

**KEYNOTE SPEAKERS:**

Valerie Daggett (University of Washington), Dynameomics: From Atomistic Simulations of All Protein Folds to the Discovery of a New Protein Structure to the Design of a Diagnostic Test for Alzheimer's Disease

Maria Girone (European Organization for Nuclear Research), Big Data Challenges at the CERN HL-LHC

Lisa Schurer Lambert (Oklahoma State University), Research Methods as a Lens: How We Know What We Know

**PROFESSORS AND COURSES:**

Paolo Adesso (University of Salerno), [introductory/intermediate] Data Fusion for Remotely Sensed Data

Thomas Bäck & Hao Wang (Leiden University), [introductory/intermediate] Data Driven Modeling and Optimization for Industrial Applications

Marcelo Bertalmío (Spanish National Research Council), [intermediate] Novel Vision Models in Image Processing, and How They Can Improve Artificial Neural Networks

Gianluca Bontempi (Université Libre de Bruxelles), [intermediate/advanced] Machine Learning against Credit-card Fraud: Lessons Learned from a Real Case

Altan Cakir (Istanbul Technical University), [intermediate] Big Data Analytics with Apache Spark

Michael X. Cohen (Radboud University Nijmegen), [introductory] Dimension Explosion and Dimension Reduction in Brain Electrical Activity

Ramez Elmasri (University of Texas, Arlington), [intermediate] Spatial, Temporal, and Spatio-Temporal Data

Ian Fisk (Flatiron Institute), [introductory] The Infrastructure to Support Data Science

Michael Freeman (University of Washington), [intermediate] Interactive Data Visualization Using D3 + Observable

David Gerbing (Portland State University), [introductory] Derive Meaning from Data with R Visualizations

Christopher W.V. Hogue (Ericsson Inc.), [introductory] Applied Information Theory for Scalable Database Schema and Query Templates

Ravi Kumar (Google), [intermediate/advanced] Clustering for Big Data

Victor O.K. Li (University of Hong Kong), [intermediate] Deep Learning and Applications

Wladek Minor (University of Virginia), [introductory/advanced] Big Data in Biomedical Sciences

José M.F. Moura (Carnegie Mellon University), [introductory] Graph Signal Processing

Panos Pardalos (University of Florida), [intermediate/advanced] Optimization and Data Sciences Techniques for Large Networks

Valeriu Predoi (University of Reading), [introductory] A Beginner's Guide to Big Data Analysis: How to Connect Scientific Software Development with Real World Problem

Karsten Reuter (Max Planck Society), [introductory/intermediate] Machine Learning for Materials and Energy Applications

Ramesh Sharda (Oklahoma State University), [introductory/intermediate] Network-based Health Analytics

Steven Skiena (Stony Brook University), [introductory/intermediate] Word and Graph Embeddings for Machine Learning

Alexandre Vaniachine (VirtualHealth), [intermediate] Open-source Columnar Databases

Sebastián Ventura (University of Córdoba), [intermediate/advanced] Supervised Descriptive Pattern Mining

Xiaowei Xu (University of Arkansas, Little Rock), [introductory/advanced] Language Models and Applications

#### **OPEN SESSION:**

An open session will collect 5-minute voluntary presentations of work in progress by participants. They should submit a half-page abstract containing the title, authors, and summary of the research to david@irdta.eu by October 2, 2021.

#### **INDUSTRIAL SESSION:**

A session will be devoted to 10-minute demonstrations of practical applications of big data in industry. Companies interested in contributing are welcome to submit a 1-page abstract containing the program of the demonstration and the logistics needed. People participating in the demonstration must register for the event. Expressions of interest have to be submitted to david@irdta.eu by October 2, 2021.

#### **EMPLOYER SESSION:**

Firms searching for personnel well skilled in big data will have a space reserved for one-to-one contacts. It is recommended to produce a 1-page .pdf leaflet with a brief description of the company and the profiles looked for to be circulated among the participants prior to the event. People in charge of the search must register for the event. Expressions of interest have to be submitted to david@irdta.eu by October 2, 2021.

#### **ORGANIZING COMMITTEE:**

Stavi Baram (Beersheba)  
Mark Last (Beersheba)  
Carlos Martín-Vide (Tarragona, program chair)  
Sara Morales (Brussels)  
Manuel J. Parra-Royón (Granada)

Lior Rokach (Beersheba, co-chair)  
Bracha Shapira (Beersheba, co-chair)  
David Silva (London, co-chair)

### **REGISTRATION:**

It has to be done at

<https://irdta.eu/bigdat2021a/registration/>

The selection of up to 8 courses requested in the registration template is only tentative and non-binding. For the sake of organization, it will be helpful to have an estimation of the respective demand for each course. During the event, participants will be free to attend the courses they wish.

Since the capacity of the venue is limited, registration requests will be processed on a first come first served basis. The registration period will be closed and the on-line registration tool disabled when the capacity of the venue will get exhausted. It is highly recommended to register prior to the event.

### **FEES:**

Fees comprise access to all courses and lunches. There are several early registration deadlines. Fees depend on the registration deadline.

### **ACCOMMODATION:**

Suggestions for accommodation will be available in due time at

<https://irdta.eu/deeplearn2021a/accommodation/>

### **CERTIFICATE:**

A certificate of successful participation in the event will be delivered indicating the number of hours of lectures.

### **QUESTIONS AND FURTHER INFORMATION:**

david@irdta.eu

### **ACKNOWLEDGMENTS:**

Ben-Gurion University of the Negev

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