

EURO PhD Summer School on MCDA/MCDM 2022, Bilkent University, Ankara, Turkey

The 2022 EURO PhD Summer School on MCDA/MCDM took place at Bilkent University, Ankara, Turkey, on July 18-29, 2022. It was organized by Özlem Karsu (Bilkent University, Turkey) and Murat Köksalan (Middle East Technical University, Turkey and University of Michigan, Ann Arbor, USA). This was the 14th of a long line of summer schools, the first of which was held in 1983. The summer school was originally scheduled to be organized by Gülşah Karakaya and Banu Lokman at the Middle East Technical University, Ankara, Turkey for 2020 and had to be postponed twice due to the pandemic. We are indebted to Gülşah Karakaya and Banu Lokman for their initial setup that made our job easier.

Through the summer schools, PhD students get an in-depth understanding of the theoretical and applied aspects of MCDA/MCDM, interacting with some of the top scholars in the area, and conducting hands-on exercises/cases. This year, 43 students were accepted and 39 ended up attending. Participants are either currently pursuing a graduate degree in, or have recently graduated from programs in 14 different countries: Brazil (1), Denmark (1), Finland (2), France (4), Germany (7), India (1), Iran (1), Italy (6), Japan (1), Netherlands (3), Morocco (1), Spain (1), Turkey (8) and UK (2). 20 of the participants were women and 19 were men. We were delighted with both the diversity and the number of participants under the continuing uncertainties of the pandemic.

The topics covered in the summer school (in the order covered) were:

- Problem Structuring
- Value-Focused Thinking
- Multiobjective Optimization (MOO)
- Interactive Methods
- Multiobjective Combinatorial Optimization (MOCO)
- Software
- Evolutionary Multiobjective Optimization (EMO)
- Behavioral Aspects of Decision Making
- Multi-attribute Utility and Value Theory (MAUT/MAVT), Multi-criteria Group Decision Making (MCGDM)
- Decision Rule Approach
- Robust Ordinal Regression
- Outranking Methods
- Applications in Finance

The full program of the Summer School is available at <https://www.ie.bilkent.edu.tr/mcdm/program/>

These topics are covered by top-scholars in the area, listed below in alphabetical order:

- Adiel T. de Almeida, Federal University of Pernambuco, Brazil
Multi-attribute Utility and Value Theory (MAUT/MAVT), Multi-criteria Group Decision Making (MCGDM)

- Erdi Daşdemir, Hacettepe University, Turkey
Case Work
- Matthias Ehrgott, Lancaster University, UK
MCDA/M Community, Multiobjective Combinatorial Optimization
- Carlos M. Fonseca, University of Coimbra, Portugal
Evolutionary Multiobjective Optimization
- Salvatore Greco, University of Catania, Italy
Robust Ordinal Regression
- Gülşah Karakaya, Middle East Technical University, Turkey
Software
- Özlem Karsu, Bilkent University, Turkey
Case Work
- Ralph L. Keeney, Duke University, USA
Problem Structuring, Value-Focused Thinking
- Murat Köksalan, Middle East Technical University, Turkey and University of Michigan, Ann Arbor, USA
Behavioral Aspects of Decision Making, Interactive Methods of Multiobjective Optimization I
- Serpil Sayın, Koç University, Turkey
Multiobjective Optimization Theory
- Roman Slowinski, Poznan University of Technology, Poland
Decision Rule Approach, “Meet the editor”, Outranking Methods
- Jyrki Wallenius, Aalto University, Finland
Interactive Methods of Multiobjective Optimization II, History and Traditions of MCDM
- Constantin Zopounidis, Technical University of Crete, Greece
MCDM Applications in Finance

Opening session



Group photo after the last lecture



In addition to the 33 hours of lectures on the theory (delivered in 11 sessions, each 90 minutes long), the program involved a session on History of MCDA/MCDM (delivered by Jyrki Wallenius), a “Meet the editor” session (held by Roman Słowiński), and a session on the MCDA/MCDM Community, in which Matthias Ehrgott, the president of the International Society on MCDM, provided information on various subgroups that are related to the general field of MCDA/MCDM and their activities.

Eight teams of students were formed to work on two case studies. The first case study was developed by Murat Köksalan and Sakine Batun and the second one by Erdi Daşdemir and Özlem Karsu. 10 sessions were devoted to the case study preparations under the guidance of faculty members. The teams presented their work at the end of the summer school. The presentations and the results of the groups were evaluated by the lecturers attending the last day of sessions (Erdi Daşdemir, Gülşah Karakaya, Özlem Karsu (remotely), Murat Köksalan and Constantin Zopounidis), who provided constructive feedback and suggestions for extensions. The students did an excellent job on the case studies and proposed creative and well-thought-out solutions to these challenging problems.



A case study session



Working on the case study (Courtesy of Prashant Barsing)

The summer school also included a social program. The first activity of the social program was the Welcome Reception held in the first evening of the summer school. The reception was a warm welcome to the participants and enabled them to get to know each other and the lecturers better, enjoying a delicious selection of Turkish appetizers and drinks in the meantime!

Some photos from the welcome reception





Özlem and the volunteers

The social program continued with an outing on Saturday, July 23rd. We first visited the old city and Ankara Castle for sightseeing and shopping. We then had a guided tour of the Museum of Anatolian Civilizations, the winner the “Museum of the year in Europe” in 1997, exhibiting the original works of Anatolian civilizations since the Paleolithic age. This tour was followed by a short visit to the neighboring Erimtan Museum.

On the evening of July 23rd, we had the social dinner at “Ruhi Bey Meyhanesi,” a restaurant that specializes on Turkish mezzes and features traditional live Turkish music. The students and the lecturers had the opportunity to taste Turkish mezzes and raki; and experienced and enjoyed traditional Turkish dances (see a video here ☺ <https://photos.app.goo.gl/DCxgmitTHuopzH5L8>)

Some photos from the outing (Special thanks to Zühal Özcan and Prashant Barsing for sharing)



Photos from the dinner on July 23rd



More photos from students



(Courtesy of Hasan Taş. Hasan says “After visiting ANITKABIR, we went to a fantastic sish kebab place. It was like all you can eat restaurant. I got positive feedback from everyone.”)



Structuring complex problems via best drink decision support in the night of Ankara (courtesy of Maura Hunt)



Good drinks for decision opportunities (courtesy of Maura Hunt)



(Courtesy of Hasan Taş. Hasan says “We had the best kebab in Ankara with Prof. Constantin Zopounidis and Dimitris (his son). Then we went to a nice pistachio baklava and Marash ice-cream place. They were so full. I had to trick them to convince tasting the dessert by saying ‘the dessert will be so light’ ”)

Upon completion, all participants received a certificate signed by the organizers.

We would like to thank the Association of European Operational Research Societies (EURO) for its sponsorship that helped us keep the costs to students low. We also thank the International Society on MCDM for its support for partially covering the registration fees of those students attending from developing countries with limited funding. We also acknowledge the support of Bilkent University and thank Bahar Yetiş (chair of the Industrial Engineering Department), Ayşe Oran (Administrative Assistant), and volunteering students Yunus Emre Çakır, Batuhan Çelik, Onur Kılınç, Göksu Ece Okur, and Elif Rana Yöner, from the Industrial Engineering Department. Finally, special thanks to all the students for their attendance and enthusiastic participation; and to the lecturers for their passions to support the next generation of researchers in MCDA/MCDM.

We believe that the summer school provided a unique opportunity for students to enhance their knowledge and skills in theory and applications of MCDA/MCDM, to network among themselves and with the lecturers, and initiate collaborations and long-lasting friendships. We believe that this summer school has continued the tradition of inspiring some of the future leaders of our field. We look forward to observing and enjoying the realization of this prophecy in the not-so-distant future.

More details on summer school can be accessed via the website
(<https://www.ie.bilkent.edu.tr/mcdm>)

We look forward to seeing you all at the 27th International Conference on Multiple Criteria Decision Making, in Hammamet, Tunisia in 2024!