

International Conference
APPLIED STATISTICS 2024
Conference Program

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September 23–25, 2024
Koper/Capodistria, Slovenia

08.30–15.00 **Registration**

09.00–09.30 **Opening**
Room 1

Chair: Lara Lusa

09.30–10.20 **Invited Lecture**
Room 1

Chair: Anuška Ferligoj

1. **Hierarchical multilevel analysis of network dynamics**
Tom Snijders

10.20–10.50 **Break**

10.50–11.50 **Complex Networks**
Room 1

Chair: Tom Snijders

1. **OpenAlex2Pajek: An R-library for creating bibliometric networks**
Vladimir Batagelj
2. **Exploratory analysis of topic co-occurrence in the web counselling service**
Marjan Cugmas

10.50–11.50 **Mathematical Statistics**
Room 2

Chair: Mihael Perman

1. **Semiparametric modeling of educational performance characteristics**
Marek Brabec
2. **Spectral CLTs with long memory for large language models**
Andrej Srakar
3. **Using normal cones to solve non-linear differential equations for imprecise Markov chains**
Damjan Škulj

11.50–12.00 **Break**

12.00–13.00 **Data Science**
Room 1

Chair: Vladimir Batagelj

1. **Infrastructure innovations and their impact on electricity markets volatility: A case study of Sicily and Sardinia**
Marina Bertolini, Francesco Lisi and Pierdomenico Dutillo
2. **Informational and topological analysis of 2015–2023 Sentinel 1 time series for detecting vegetation pest diseases**
Luciano Telesca, Nicodemo Abate, Michele Lovallo and Rosa Lasaponara
3. **Discrete-event simulation to evaluate the best location of infrastructure to implement drones in last-mile logistics**
Caterina Caramuta, Alessia Grosso and Giovanni Longo

12.00–13.00 **Artificial Intelligence 1**

Room 2

Chair: Damjan Škulj

1. **Application of federated learning: A comparative study on cost profiling of patients after acute myocardial Infarction using federated learning**
Shinto Pulickal Thomas, Jiregna Olani Kedida, Corrado Lanera and Dario Gregori
2. **Recognition of dietary activity via commercial smartwatch orientation sensor analysis and generative data augmentation**
Mohammad Junayed Bhuyan, Ileana Baldi, Dario Gregori, Corrado Lanera and Luca Vedovelli
3. **Ethical considerations of using artificial intelligence tools in higher education**
Vanja Erčulj and Ajda Šulc

13.00–14.30 **Lunch**

14.30–15.50 **Social Sciences and Humanities 1**

Room 1

Chair: Marjan Cugmas

1. **Collecting visual data with web surveys: The case of bedroom flooring**
Ana Slavec
2. **Addressing statistical literacy challenges through data repositories**
Irena Vipavc Brvar
3. **Attitudes toward the use of artificial intelligence in medicine**
Vanja Erčulj, Jaro Lajovic, Jonas Miklavčič, Stjepan Štivić, Eva Škrlep and Štefan Grosek
4. **The perception of professional autonomy of nurses in Slovenia**
Rebeka Lekše and Ana Slavec

14.30–15.50 **Measurement and Modeling**

Room 2

Chair: Irena Ograjenšek

1. **Validity as the fundamental measurement quality in quantitative, qualitative and mixed methods empirical research**
Joca Zurc, Valentin Bucik, Tina Kogovšek and Anuška Ferligoj
2. **Efficient study design to estimate population means with multiple measurement instruments**
Michal Bitan, Malka Gorfine, Laura Rosen and David M. Steinberg
3. **Spatial noise in panel regressions**
Giovanni Millo
4. **Sample size planning in measurement invariance research**
Gregor Sočan

15.50–16.10 **Break**

16.10–17.30 **Social Sciences and Humanities 2**

Room 1

Chair: Gregor Sočan

1. **A Bayesian model for age at death with unequal adult mortality and cohort effects**
Matteo Dimai and Marek Brabec
2. **Effect sizes for detection of differential item functioning**
Michaela Cichrová, Adéla Hladká and Patrícia Martinková
3. **SemSex: A new semi-automated tool for assessing sex education representation in Slovene curricula for evaluation and policy enhancement**
Tim Prezelj, Timotej Knez and Slavko Žitnik
4. **Methodological competencies and attitudes towards artificial intelligence among students in pedagogical study programmes**
Joca Zurc

16.10–18.00 **Statistical Literacy**

Room 2

Chair: Vanja Erčulj

1. **International statistical literacy project: Past, present, and future**
Irena Ograjenšek
2. **Statistical literacy in early childhood**
Ana Zalokar and Lara Lusa
3. **Advancing statistical literacy among adults through interactive play**
Ana Slavec
4. **Statistics in picture books: Finding opportunities for enhancing statistical literacy in early childhood**
Lara Lusa
5. **From data to insight: Exploring the importance of statistical literacy in education (roundtable discussion)**
Lara Lusa, Irena Ograjenšek, Vanja Erčulj, Ana Zalokar, Ana Slavec and Tim Prezelj

18.00–19.30 **Sightseeing**

19.45–21.00 **Reception**

08.30–12.00 **Registration**

09.00–09.50 **Invited Lecture**

Room 1

Chair: Maja Pohar Perme

1. **Fine-Gray subdistribution hazard models to simultaneously estimate the absolute risk of different event types: Cumulative total failure probability may exceed 1**

Hein Putter

09.50–10.20 **Break**

10.20–11.40 **Biostatistics 1**

Room 1

Chair: Hein Putter

1. **A while-alive estimator for recurrent events**

Maja Pohar Perme

2. **Predictors with limit of detection: Modelling event-free survival in patients with PAD**

Nataša Kejžar, Aleš Blinc, Anja Boc, Vinko Boc, Mojca Božič Mijovski, Kevin Pelicon and Klemen Petek

3. **Leveraging cancer incidence for lead time estimation in cancer screening programmes**

Bor Vratinar and Maja Pohar Perme

4. **Goodness of fit for linear mixed models with multiple levels of random effects**

Jakob Peterlin

10.20–11.40 **Artificial Intelligence 2**

Room 2

Chair: Nada Lavrač

1. **Machine learning at scale: From logistic regression to multi-tower approaches**

Blaž Škrlić

2. **Enhancing clinical study analyses through federated learning: A systematic review using generative pretrained transformer and large language models**

Jiregna Olani Kedida, Dario Gregori, Corrado Lanera and Honoria Ocagli

3. **Stochastic blockmodels of the dynamic global-trade network: A triangulation study**

Fabio Ashtar Talarico and Aleš Žiberna

11.40–11.50 **Break**

11.50–13.10 **Biostatistics 2**
Room 1

Chair: Janez Stare

1. **Ranking of Olympic-style weightlifting performances adjusted for body mass and sex**
Marianne Huebner
2. **Visualizing a marker's degrees of necessity and of sufficiency in the predictive-ness curve**
Andreas Gleiss
3. **Regression modelling in an extended multi-state model using relative survival**
Damjan Manevski, Hein Putter, Eva A. S. Koster, Johanneke E. A. Portielje, Maja Pohar Perme and Liesbeth C. De Wreede

11.50–13.10 **Official Statistics**
Room 2

Chair: Mojca Bavdaž

1. **Nowcasting monthly indicators in official statistics**
Aleša Lotrič Dolinar, Mojca Bavdaž, Tjaša Bartolj, Jerneja Kos, Barbara Mörec, Darja Peljhan, Sašo Polanec, Tjaša Redek and Jelena Zorić
2. **Daily tourism flow in Slovenia and Slovenia Interactively: The usage of PowerBI for almost real-time data visualizations**
Teja Zupančič and Igor Štefelin
3. **Data quality in official statistics and in the Statistical Office of the Republic of Slovenia**
Domen Repnik
4. **Enhancing statistical data collection through respondent-centric approaches**
Ema Mišić
5. **Campaign on the 80th anniversary of the Statistical Office of the Republic of Slovenia**
Irena Svetin and Anže Jesenovec

13.10–14.40 **Lunch**

14.40–16.00 **Statistical Applications**
Room 1

Chair: Blaž Škrlj

1. **Enabling topic-modeling for specific domains via domain-adaptation of LLMs**
Boshko Koloski and Senja Pollak
2. **Statistical learning and music perception: Analyzing children's songs through the cognitive computational model IDyOM**
Lorena Mihelač
3. **On estimating standard deviation from average moving range**
Gaj Vidmar

14.40–16.00 **Poster Session**

Room 2

Chair: Nataša Kejžar

1. **Developing a prediction model to estimate the number of slaughtered bovine animals**
Nikolina Rizanovska
2. **Impacts of assumption violations on accuracy in test equating: Insights from a simulation study**
Michaela Vařejková, Patrícia Martinková and Eva Potužníková
3. **Forecasting lung cancer incidence using an age-period-cohort model**
Maja Jurtela, Tina Žagar and Vesna Zadnik
4. **Paired t-test and mixed models**
Urška Komatar and Tinkara Perme
5. **Comparing tests for normality: A simulation study**
Lan Gerdej and Tanja Gošnjak

16.00–16.05 **Closing**

Room 1

9.00–12.00 **Workshop**
Room 2

Chair: Lara Lusa

1. **Time-dependent effects and time-dependent covariates in survival analysis**
Hein Putter