

Università degli Studi di Brescia
Dipartimento di Economia e Management
C.da S. Chiara 50, 25122 Brescia

<https://bdsports.unibs.it/cladag-school-2026/>

The school is organized within the activities of the BDsports – Big Data analytics in sports research network (<http://bdsports.unibs.it/>) and is part of the initiatives promoted by CLADAG (Classification and Data Analysis Group of the Italian Statistical Society).

The aim of the school is to provide an overview of statistical methods and models useful for the analysis of sports data. Topics will include a variety of methodological approaches and applications, in line with the research interests and expertise of the lecturers.

The school is intended for PhD students, young researchers, and practitioners with an interest in statistical methods applied to sports. The program will include both theoretical lectures and hands-on sessions, fostering interaction and discussion.

Participation in the CLADAG School is limited to a maximum of 28 participants. Should the number of applications exceed this limit, a selection process will be carried out by the Scientific Committee based on the applicants' CVs, which must be submitted together with the registration form.

Scientific and Organizing Committee

Coordinators: Marica Manisera and Paola Zuccolotto, BDsports, University of Brescia, Italy
Eugenio Brentari, University of Brescia, Italy
Maurizio Carpita, University of Brescia, Italy
Leonardo Egidi, University of Trieste, Italy
Ambra Macis, University of Brescia, Italy

Lecturers

Andreas Groll, TU Dortmund University, Germany
Dimitris Karlis, Athens University of Economics and Business, Greece
Christophe Ley, University of Luxembourg, Luxembourg
Marica Manisera, University of Brescia, Italy
Ioannis Ntzoufras, Athens University of Economics and Business, Greece
Paola Zuccolotto, University of Brescia, Italy

Partners

Big Data Analytics in Sports (BDsports, <https://bdsports.unibs.it/>)
PRIN Project "SMARTSports", Statistical Models and AlgoRiThms in sports. Applications in professional and amateur contexts, with able-bodied and disabled athletes, PRIN 2022
International Statistical Institute – Special Interest Group on Sports Statistics (<https://isi-web.org/committee/special-interest-group-sports-statistics>)

Program

Monday, 16 March 2026		
9:00 – 9:15	M. Manisera, P. Zuccolotto	Welcome and opening remarks
9:15 – 10:00	P. Zuccolotto	Introduction to Sports Analytics
10:00 – 13:00	I. Ntzoufras	Current Issues in Sports Analytics and Double Poisson Model for Football
14:30 – 17:30	I. Ntzoufras	Current Issues in Sports Analytics and Double Poisson Model for Football
Tuesday, 17 March 2026		
9:30 – 12:30	D. Karlis	Ranking and Rating in Sports
14:30 – 17:30	D. Karlis	Tracking Data in Sports
Wednesday, 18 March 2026		
9:30 – 12:30	C. Ley	Statistically Enhanced Learning for Sports Analytics and Medicine
14:30 – 17:30	C. Ley	Statistically Enhanced Learning for Sports Analytics and Medicine
Thursday, 19 March 2026		
9:30 – 12:30	A. Groll	Modeling and Prediction of Match Outcomes
14:30 – 17:30	A. Groll	Modeling and Prediction of Match Outcomes
Friday, 20 March 2026		
9:30 – 11:30	Round Table	PRIN Project “SMARTSports” (PI: L. Egidi, University of Trieste)
11:30 – 12:15	M. Manisera	Conclusions and Discussion
12:15 – 12:30	M. Manisera, P. Zuccolotto	Closing remarks

Introductory background

Egidi, L., Karlis, D., Ntzoufras, I. (2025). Predictive Modelling for Football Analytics. Chapman & Hall/CRC Data Science series.

Aldous, D. (2017) Elo Ratings and the Sports Model: A Neglected Topic in Applied Probability? Statistical Science, 32, 616–629

Cattelan, M.; Varin, C.; Firth, D. (2013) Dynamic Bradley–Terry modelling of sports tournaments. Applied Statistics, 62, 135–150

Kovalchik, S. A. (2023). Player tracking data in sports. Annual Review of Statistics and Its Application, 10(1), 677–697.

Fahrmeir, L., Kneib, T., Lang, S., Marx, B. (2021). Regression - Models, Methods and Applications. Springer.

Hastie, T., Tibshirani, R., Friedman, J. (2009). The Elements of Statistical Learning – Data Mining, Inference, and Prediction. Springer

Zuccolotto, P., Manisera, M. (2020). Basketball Data Science - With Applications in R. Chapman & Hall/CRC Data Science series.

Zuccolotto, P., Manisera, M., Sandri, M. (2026). Advanced Basketball Data Science - With Applications in R. Chapman & Hall/CRC Data Science series.

Facilities Required

- Software: R (open source), RStudio, R packages: ranger, party, rpart, mlr3, WinBUGS/OpenBUGS, BradleyTerry2, elo, footBayes
- Course Material. All course materials, including the data and R scripts for the examples, will be made available for course participants.

Registration

The registration fee includes school attendance and all course materials

Early registration (by January 16, 2026)

Category	Fee
Regular	€600
SIS / IFCS Member	€500
Under 35 CLADAG Member	€400

Standard registration (by February 28, 2026)

Category	Fee
Regular	€700
SIS / IFCS Member	€600
Under 35 CLADAG Member	€600

Please register by completing the [Registration form](#) (see below for payment details).
To complete the registration, participants are requested to upload both the proof of their bank transfer and their CV in PDF format through the Registration Form.

The payments must be made via **bank transfer**:

Account holder: SIS, Società Italiana di Statistica

Bank: Fineco Bank - IBAN: IT7800301503200000003783359

BIC SEPA: FEBIITM1 - BIC SWIFT code: FEBIITM2

Payment reference: CLADAG 2026 School, First Name Family Name

Please, make the transfer at no cost for the recipient.

Receipt of the payment will be provided by the SIS Secretariat.

Course short descriptions

Current Issues in Sports Analytics and Double Poisson Model for Football

Prof. Ioannis Ntzoufras, Athens University of Economics and Business, Greece

Part A: Current Issues in Sports Analytics

- Introduction
- Benefits of Sports Analytics
- Analytics in Football, Basketball and Baseball
- Main Topics/Issues in Sports Analytics
 - Prediction
 - Player Evaluation & Performance analytics
 - Physical Metrics of Players in training
 - Injury prevention (and prediction)
 - Inline game metrics with wearables
 - Scheduling
 - Sports Economics & Competitive Balance

Part B: The Double Poisson Model for Football

- Models for Football
- The Double Poisson Model
- The Vanilla formulation
- Model Assumptions
 - Over-dispersion
 - Correlation
 - Dynamic Models
 - Excess of Draws
- Covariates vs Abilities
- Protocol for well fitted/prediction model
- League regeneration
- League prediction using simulation
- Example using R and OpenBUGS

Ranking and Rating in Sports - Tracking data in Sports

Prof. Dimitris Karlis, Athens University of Economics and Business, Greece

1. Rating and Ranking in Sports
 - a. Why we need that
 - b. Paired Comparisons the Bradely -Terry model and variants
 - c. Elo method
 - d. Other Approaches
 - e. Hands on
2. Tracking data in Sports
 - a. Data Technologies
 - b. New indices/Metrics
 - c. Use in Practice and Insights
 - d. Hands on

Statistically Enhanced Learning for Sports Analytics and Medicine

Prof. Christophe Ley, University of Luxembourg, Luxembourg

1. Where it all started: prediction of the World Cup 2018
2. The concept of Statistically Enhanced Learning (SEL)
3. SEL for handball
4. SEL for sports medicine with focus on survival analysis
5. Hands-on SEL on sports data with R, and to brainstorm how to present results to coaches and medical staff.

Modeling and Prediction of Match Outcomes

Prof. Andreas Groll, TU Dortmund University, Germany

The course introduces the basics of modeling and predicting match outcomes. We will provide an introduction to standard modeling techniques such as Generalized Linear Models (GLMs), regression and classification trees (CARTs), and random forests. Moreover, the course will address different sports, such as football (soccer), handball, and tennis.

The lessons combine theoretical topics with practical examples using R software.