

PERSONAL INFORMATION

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EMPLOYMENT

2025 - Postdoctoral fellow in the Human Evolutionary Ecology Group lead by Prof. Andrea Migliano, Department of Evolutionary Anthropology, University of Zürich, Zürich, Switzerland.

EDUCATION

- 2021 - 2025 **Ph.D. in Network Science (*Summa cum Laude*)**: Supervised by Prof. Federico Battiston at the Department of Network and Data Science, Central European University, Vienna, Austria. Thesis Topic: *Collective dynamics in evolutionary processes and strategic group interactions*
- 2016 - 2021 **BS-MS Dual Degree**: Indian Institute of Science Education and Research, Pune, India.

AREAS OF INTEREST

Game theory, complex systems, network science, evolutionary anthropology, collective behaviour, cultural evolution

PUBLICATIONS

10. F. Battiston, V. Capraro, F. Karimi, S. Lehmann, AB. Migliano, **Onkar Sadekar**, A. Sánchez and Matjaž Perc, *Higher-order interactions shape collective human behaviour*. Nat. Hum. Behav. 9, 2441–2457 (2025)
9. **Onkar Sadekar**, A. Civilini, V. Latora, and F. Battiston, *Drivers of cooperation in social dilemmas on higher-order networks*. J. R. Soc. Interface. **22** 20250134 (2025)
8. C. Gunasekaram, F. Battiston, **Onkar Sadekar**, C. Padilla-Iglesias, *et al.*, *Population connectivity shapes the distribution and complexity of chimpanzee cumulative culture*. Science **386**, 6724, 920-925 (2024)
7. **Onkar Sadekar**, A. Civilini, J. Gomez-Gardenes, V. Latora, and F. Battiston, *Evolutionary game selection creates cooperative environments*. Phys. Rev. E **110** 014306 (2024)
6. **Onkar Sadekar**, S. Chowdhary, M.S. Santhanam, and F. Battiston, *Individual and team performance in cricket*. R. Soc. Open Sci. **11** 240809 (2024)
5. A. Civilini, **Onkar Sadekar**, F. Battiston, J. Gomez-Gardenes, and V. Latora, *Explosive cooperation in social dilemmas in higher-order networks*. Phys. Rev. Lett. **132** 167401 (2024)
4. **Onkar Sadekar**, M. Budamagunta, G. J. Sreejith, S. Jain, and M. S. Santhanam, *An infectious diseases hazard map for India based on mobility and transportation networks*, Current Science 121, **9** (2021)

3. S. Saryal, **Onkar Sadekar**, and BK. Agarwalla, *Thermodynamic uncertainty relation for energy transport in a transient regime: A model study*, Phys. Rev. E **103**, 022141 (2021)
2. V. Kumar, **Onkar Sadekar**, and U. Basu, *Active Brownian Motion in two-dimensions under Stochastic Resetting*, Phys. Rev. E **102**, 052129 (2021)
1. **Onkar Sadekar**, and U. Basu, *Zero-current nonequilibrium state in symmetric exclusion process with dichotomous stochastic resetting* J. Stat. Mech. 073209 (2020)

UNPUBLISHED WORKS

2. M. Bozhidarova, Y. Cai, R. Carvalho, D. Cirulli, Q. Dehaene, M. Diaz, A. Krasnokutskaya, B. Pereira, **Onkar Sadekar**, and F. Battiston, *From streaks to synergies: A multi-scale analysis of performance and scoring in the NBA*. arXiv preprint arXiv:2606.27957 (2026).
1. J. Llabrés, **Onkar Sadekar**, F. Malizia, F. Battiston, *Emergence of cooperation in nonlinear higher-order public goods games*. arXiv: 2026:07228

CONFERENCES AND SCHOOLS

- IC2S2 Contributed talk at IC2S2-2025, Norrköping.
- NetSci Contributed talk at NetSci-2025, Maastricht.
- NetSciX Contributed talk at NetSciX-2025, Indore.
- VBC Invited talk at the Vienna Behavioural Circle meet 2024, Vienna.
- Como Contributed lightning talk at Lake Como School on Complex Networks-2024, Como.
- NetSciX Contributed talk at NetSciX-2024, Venice.
- NetSci Contributed talk at NetSci-2023, Vienna.
- CompleNet Contributed talk at the CompleNet - 2023, Aveiro.
- CCS Contributed talk at the game theory satellite at the CCS-2022, Palma de Mallorca.

SKILLS

- Programming: Comfortable with Python, Julia, C, and Linux-Terminal commands. Well-versed with NetworkX, Pandas, NumPy, and Matplotlib amongst other python libraries.
- Softwares: Proficient in Inkscape, gnuplot, and $\text{\LaTeX}$.

SCHOLARSHIPS & AWARDS

- 2026 CEU Award for Best dissertation.
- 2025 CEU Award for Advanced Doctoral Students to “recognize exceptional performance and acknowledge outstanding research achievement”.
- 2021 - 2025 Full scholarship and tuition fee waiver at Central European University to pursue Ph.D. in Network and Data science.
- 2017 Gold Medal in National Graduate Physics Exam (NGPE)-2017, conducted by Indian Association of Physics Teachers (IAPT). Placed among top 5 out of 15,000 students.
- 2016-2021 INSPIRE scholarship by Government of India for pursuing a Bachelor and Masters in Science.

TEACHING

- Fall 2022 TA for '*Introduction to complex systems*' course for Bachelors students.
- Fall 2023 TA for '*Introduction to complex systems*' course for Bachelors students.
- Winter 2024 TA for '*Introduction to quantitative social science*' course for Bachelors students.
- Fall 2024 TA for '*Introduction to complex systems*' course for Bachelors students.
- Fall 2024 TA for '*Research seminar*' course for Masters students.
- Fall 2025 TA for '*Current debates in evolutionary biology and anthropology*' course for Bachelors and Masters students.

SERVICE TO COMMUNITY

- yrCSS **Advisory board member** for young researchers of the complex systems society (2026-2028).
Website
- Server admin **Server admin** from September 2022 to September 2023 for the Department of Network and Data Science Computing Cluster at Central European University.
- NetSci-2023 **Web and Social Media head** for NetSci-2023, the international conference on Network science. <https://netsci2023.wixsite.com/netsci2023>