DR. RAMI KATZ – CURRICULUM VITAE

The transliteration of my name appearing in official documents is Ram (Rami) Kats. However, in my scientific and daily activities, as well as in my publications, my name appears as Rami Katz.

Affiliation: Dept. of Industrial Engineering, Università degli Studi di Trento.
E-Mail: ramkatsee@gmail.com or ram.kats@unitn.it, ***Phone:*** +972526688584
Homepage: www.ramikatz.com

Education

- ***2018 - 2022:*** Ph.D. in Electrical Engineering, Systems Dept., School of Electrical Engineering, Tel-Aviv University, Israel. Academic Supervisor: Prof. Emilia Fridman.
  Date of conferral: 15/09/2022.
- ***2015 - 2017:*** M.Sc. (Summa cum Laude) in Applied Mathematics, Dept. of Mathematics, Tel-Aviv University, Israel. Academic Supervisor: Prof. Adi Ditkowski.
- ***2011 - 2014***: B.Sc. (Summa cum Laude) in Mathematics\Economics, Tel-Aviv University.

Academic Employment

- ***2025 - :*** Assistant Professor, Systems Dept., School of Electrical Engineering, Tel-Aviv University, Israel. To commence in October 2025. Time allocation: 80% research, 20% teaching.
- ***2023 - 2025:*** Postdoc, Dept. of Industrial Engineering, University of Trento, Italy. Time allocation: 100% research (teaching on a voluntary basis).
- ***2022 - 2023:*** Postdoc Dept. of Electrical Engineering, Tel-Aviv University, Israel. Time allocation: 100% research.

Professional Titles

- ***2024:*** National Scientific *Habilitation* (Abilitazione Scientifica Nazionale) as an *Associate Professor* in the Italian higher education system in the field 09/G1 – Systems and Control Engineering.
  www.ramikatz.com/_files/ugd/fbe1a9_12cf3a9838a848309c02eb19e2078055.pdf

Acquired external funding

- ***2025:*** Alon Fellowship – Provided by the Planning and Budgeting Committee, Council for Higher Education, Israeli Ministry of Education. Project name: Distributed-parameter-systems-based control and estimation of multi-agent systems (SCOUT). Principal Investigator: Rami Katz. Sum: Approximately 280,000 euros.

Honors and Awards

- ***2023:*** Juan de la Cierva international Spanish fellowship (Assistant Professor position level), one of 17 throughout Spain. Declined for another position.
  www.ramikatz.com/_files/ugd/fbe1a9_25ca12dbe4ce4a06b87f72d51fa1c764.pdf
- ***2021:*** Best student paper award finalist – European Control Conference 2021.
  www.ramikatz.com/_files/ugd/fbe1a9_dca6e9b514ec4f1ab292ba5a95c12579.pdf
- ***2020:*** National fellowship for excellence in Ph.D. studies. Funded by the KLA corporation.

- ***2020:*** Automatica editor's choice award for the paper "Entrainment to subharmonic trajectories in oscillatory discrete-time systems", June 2020. https://www.ramikatz.com/_files/ugd/fbe1a9_5f1c13caabc646e5a5fc6113e0298e20.pdf
- ***2020:*** Award for Outstanding Lecturers. Afeka College of Engineering (www.afeka.ac.il).
- ***2018:*** The Excellence in Studies Prize. Funded by the Yitzhak and Chaya Weinstein Research Institute for Signal Processing, Tel Aviv University.
- ***2016:*** Tel-Aviv University Excellence in Studies Prize. Awarded during M.Sc. studies.
- ***2014:*** Tel-Aviv University Excellence in Studies Prize. Awarded during B.Sc. studies.
- ***2014:*** "Gifted B.Sc. students' program", School of Mathematics, Tel-Aviv University.

Scientific Events – Organization and Chairing

- ***2025:*** Associate editor, Mathematics of Control, Signals, and Systems.
- ***2025:*** Member of the European Control Association Conference Editorial Board (EUCA-CEB), service in the International Program Committee of the European Control Conference as an Associate Editor for ECC '26.
- ***2024:*** Member of the European Control Association Conference Editorial Board (EUCA-CEB), service in the International Program Committee of the European Control Conference as an Associate Editor for ECC '25.
- ***2024:*** Co-organizer of the invited session "Biological systems: Modelling, analysis and algorithms", 63rd IEEE Conference on Decision and Control, Milan, Italy.
- ***2024:*** Co-organizer of the invited session "Optimal and model-based control of biological systems", 63rd IEEE Conference on Decision and Control, Milan.
- ***2022:*** Session chair, 25th International Symposium on Mathematical Theory of Networks and Systems (MTNS 2022), Bayreuth, Germany.
- ***2021:*** Session chair, 2021 European Control Conference (ECC21), Rotterdam, The Netherlands.

Reviewing Activity

- ***2019:*** Today: Reviewer of leading journals in mathematical systems and control theory, including: Mathematics of Control, Signals and Systems; IEEE Transactions on Automatic Control; Automatica; Systems & Control Letters; European Journal of Control; IEEE Control Systems Letters.

Teaching Experience

- ***2024:*** Lecturer, Ph.D. course "Differential inclusions and modern methods of finite-time control and observation", Dept. of Engineering, University of Trento, Trento.
- ***2022 - 2023:*** Lecturer, Dept. of Engineering, Ben-Gurion University, Beer-Sheva.
- ***2016 - 2022:*** TA and Lecturer, Afeka College of Engineering, Tel-Aviv.
- ***2011 - 2019:*** TA and Lecturer, Dept. of Mathematics and School of Electrical Engineering, Tel-Aviv University, Tel-Aviv.

Vast teaching experience as both a TA and a Lecturer in multiple courses in both Mathematics and Electrical Engineering. Responsibility for syllabus organization, teaching material creation (lecture notes, problem sets and exams), grading exams and final projects.

Student Supervision/ Co-Supervision

- **Uros Sutulovic:** Ph.D., Department of Engineering, The University of Trento, Italy. Expected graduation: 10/2026. Co-supervision with Giulia Giordano. Publications - Journal Articles (published) 1, Journal Articles (submitted) 6, Conference Papers 2.
- **Nuha Diab:** Ph.D., School of Mathematics, Tel-Aviv University, Israel. Expected graduation: 10/2025. Co-supervision with Dmitry Batenkov. Publications – Journal Articles (published) 8, 11.
- **Idan Basre:** M.Sc., School of Engineering, Tel-Aviv University, Israel. Expected graduation: 11/2025. Co-supervision with Emilia Fridman. Publications – Conference Papers 9,14.
- **Pengfei Wang:** Ph.D., School of Electrical Engineering, Tel-Aviv University, Israel. Graduated in 01/2024. Co-supervision with Emilia Fridman. Publications – Journal Articles (published) 13, Conference Papers 10, 12.

Invited Talks

- ***09/2026:*** "Spectral reconstruction of 1D reaction-diffusion systems from measurements via algebraic super-resolution methods", 5th Workshop on Stability and Control of Infinite-Dimensional Systems (SCINDIS 2026), Bayreuth, Germany.
- ***02/2025:*** "On k-cooperativity theory for dynamical systems and its application to robust biological oscillators", University of Bayreuth Dept. of Mathematics Seminar.
- ***06/2024:*** "Constrained system identification of reaction-diffusion equations: a bridge between control and inverse problems", Tel Aviv University Dept. of Applied Mathematics Seminar.
- ***05/2024:*** "ISS and stability of delayed rapidly varying systems – novel constructive approaches", University of Bozen Dept. of Engineering Seminar.
- ***12/2023:*** "On the gain of entrainment in a class of contractive bilinear control systems", Drakhlin's online seminar on functional differential equations.
- ***07/2023:*** "On the gain of entrainment in a class of contractive bilinear control systems", University of Trento Dept. of Engineering Seminar, Trento, Italy.
- ***05/2023:*** "On the accuracy of Prony's method for stable super-resolution", University of Bayreuth systems and control seminar.
- ***05/2023:*** "On the gain of entrainment in a class of contractive bilinear control systems", University of Passau systems and control seminar.
- ***03/2023:*** "On the accuracy of Prony's method for stable super-resolution", Ben-Gurion University Electrical Engineering Seminar.
- ***06/2022:*** "Multi-agent deployment via sampled-data control of Distributed Parameter Systems", Ben- Gurion University Electrical Engineering Seminar.
- ***04/2022:*** "Constructive delayed control of distributed parameter systems", Drakhlin's online seminar on functional differential equations.
- ***12/2021:*** "Sampled-data control of parabolic PDEs", Dept. of Applied Mathematics seminar.
- ***12/2021:*** "Finite-dimensional observer-based ISS and L2-gain control of parabolic PDEs", ISS and applications online seminar.
- ***04/2021:*** "Finite-dimensional observer-based control of parabolic PDEs", Distributed parameter systems online seminar.

Publication list

Original Journal Articles – Accepted/Published

1. U. Sutulovic, D. Proverbio, **R. Katz** and G. Giordano, “Efficient and faithful reconstruction of dynamical attractors using homogeneous differentiators”. Chaos, Solitons and Fractals, 199, 116798, 2025. https://doi.org/10.1016/j.chaos.2025.116798
2. A. Anderson, **R. Katz**, F. Calà Campana and G. Giordano, “Failure and Success in Single-Drug Control of Antimicrobial Resistance”. IEEE Control Systems Letters, 9, 991-996, 2025. 10.1109/LCSYS.2025.3576308
3. **R. Katz** and E. Fridman, “Constructive averaging of a class of parabolic PDEs with applications to vibrational control”. IEEE Control Systems Letters, 9, 1460-1465, 2025. 10.1109/LCSYS.2025.3580775
4. **R. Katz**, G. Giordano and M. Margaliot, “Instability of equilibrium and existence of attracting periodic orbits in general strongly 2-cooperative systems”. Journal of Differential Equations, 444, 113651, 2025. https://doi.org/10.1016/j.jde.2025.113651
5. **R. Katz**, E. Fridman and F. Mazenc, “Averaging-based ISS analysis of systems with rapidly varying periodic delays”. IEEE Transactions on Automatic Control. Accepted, to appear.
6. A. Jbara, **R. Katz** and E. Fridman, “Averaging-Based Stability of Discrete-Time Delayed Systems via a Novel Delay-Free Transformation”. IEEE Transactions on Automatic Control, 70, 2, 1328-1335, 2025. 10.1109/TAC.2024.3462733
7. **R. Katz**, T. Kriecherbauer, L. Grune and M. Margaliot, “On the gain of entrainment in a class of contractive bilinear control systems”. SIAM Journal on Control and Optimization, 62, 5, 2024. https://doi.org/10.1137/23M1585714.
8. **R. Katz**, N. Diab and D. Batenkov, “On the accuracy of Prony’s method for recovery of exponential sums with closely spaced exponents”. Applied and Computational Harmonic Analysis, 73, 101687, 2024. https://www.sciencedirect.com/science/article/pii/S1063520324000642.
9. F. Calà Campana, **R. Katz** and G. Giordano, “Sequential-Quadratic-Hamiltonian optimal control of epidemic models with an arbitrary number of infected and non-infected compartments”. IEEE Control Systems Letters. 2024. https://ieeexplore.ieee.org/document/10554668.
10. **R. Katz**, F. Mazenc and E. Fridman, “Constructive method for averaging-based stability via a delay free transformation”. Automatica, 163, 111568, 2024. https://doi.org/10.1016/j.automatica.2024.111568.
11. **R. Katz**, N. Diab and D. Batenkov, “Decimated Prony’s method for stable super-resolution”. IEEE Signal Processing Letters, 30, pp. 1467-1471, 2023. https://doi.org/10.1109/LSP.2023.3324553.
12. **R. Katz** and E. Fridman, “Global stabilization of a 1D semilinear heat equation via modal decomposition and direct Lyapunov approach”. Automatica, 149, 110809, 2023. https://doi.org/10.1016/j.automatica.2022.110809.
13. P. Wang, **R. Katz**, and E. Fridman, “Constructive finite-dimensional boundary control of stochastic 1D parabolic PDEs”. Automatica, 148, 110793, 2023. https://doi.org/10.1016/j.automatica.2022.110793.
14. **R. Katz**, E. Attias, T. Tuller, and M. Margaliot, “Translation in the cell under fierce competition for shared resources: a mathematical model”. Journal of the Royal Society Interface, 19, 197, 2022. https://doi.org/10.1098/rsif.2022.0535.

15. **R. Katz** and E. Fridman, “Finite-dimensional boundary control of the linear Kuramoto-Sivashinsky equation under point measurement with guaranteed L2 -gain”. IEEE Transactions on Automatic Control, 67, 10, 2022. https://doi.org/10.1109/TAC.2021.3121234.
16. **R. Katz** and E. Fridman, “Delayed finite-dimensional observer-based control of 1D parabolic PDEs via reduced-order LMIs”. Automatica, 142, 2022. https://doi.org/10.1016/j.automatica.2022.11034.
17. **R. Katz** and E. Fridman, “Global finite-dimensional observer-based stabilization of a semilinear heat equation with large input delay”. Systems & Control Letters, 165, 2022. https://doi.org/10.1016/j.sysconle.2022.105275.
18. **R. Katz** and E. Fridman, “Regional stabilization of the nonlinear 1D Kuramoto-Sivashinsky equation via modal decomposition”. IEEE Control Systems Letters, 6, 1814-1819, 2022. https://doi.org/10.1109/LCSYS.2021.3133492.
19. **R. Katz** and E. Fridman, “Sampled-data finite-dimensional boundary control of 1D parabolic PDEs under point measurement via a novel ISS Halanay’s inequality”. Automatica, 135, 2022. https://doi.org/10.1016/j.automatica.2021.109966.
20. **R. Katz** and E. Fridman, “Sub-predictors and classical predictors for finite-dimensional observer-based control of parabolic PDEs”. IEEE Control Systems Letters, 6, 626-631, 2022. https://doi.org/10.1109/LCSYS.2021.3084525.
21. **R. Katz** and E. Fridman, “Finite-dimensional control of the heat equation: Dirichlet actuation and point measurement”. European Journal of Control, 62, 158-164, 2021. ECC Special Issue. https://doi.org/10.1016/j.ejcon.2021.06.009.
22. **R. Katz** and E. Fridman, “Delayed finite-dimensional observer-based control of 1-D parabolic PDEs”. Automatica, 123, 2021. https://doi.org/10.1016/j.automatica.2020.109364.
23. **R. Katz**, E. Fridman and A. Selivanov, “Boundary delayed observer-controller design for reaction-diffusion systems”. IEEE Transactions on Automatic Control, 66, no. 1, 275-282, 2021. https://doi.org/10.1109/TAC.2020.2973803.
24. **R. Katz** and E. Fridman, “Constructive method for finite-dimensional observer-based control of 1-D parabolic PDEs”. Automatica, 122, 2020. https://doi.org/10.1016/j.automatica.2020.109285.
25. **R. Katz**, M. Margaliot and E. Fridman, “Entrainment to subharmonic trajectories in oscillatory discrete-time systems”. Automatica, 140, 2020. https://doi.org/10.1016/j.automatica.2020.108919**.**
26. A. Ditkowski and **R. Katz**, “On spectral approximations with non-standard weight functions and their implementations to generalized chaos expansions”. Journal of Scientific Computing, 79, 2019. https://doi.org/10.1007/s10915-019-00922-5.
27. **R. Katz** and Y. Shkolnisky, “Sampling and approximation of bandlimited volumetric data”. Applied and Computational Harmonic Analysis, 47, 235-247, 2018. https://doi.org/10.1016/j.acha.2018.11.003.

Original Journal Articles – submitted/in preparation

1. **R. Katz**, G. Giordano and D. Batenkov, “Data-driven identification of reaction-diffusion dynamics from finitely many non-local noisy measurements by exponential fitting”.

2. D. Proverbio, **R. Katz** and G. Giordano, “Robustness and resilience of dynamical networks in biology and epidemiology”.
3. **R. Katz** and G. Giordano, “Topological safe set characterization in microbial infection with drug resistance”.
4. **R. Katz**, O.Elishco and G. Giordano, “Antibiotic treatment and development of anti-microbial resistance via probabilistic string duplication models”.
5. U.Sutulovic, D.Proverbio, **R. Katz** and G. Giordano, “gPC-based robustness analysis of neural systems through probabilistic recurrence metrics”.

Conference papers

1. **R. Katz** and A. Mironchenko, “Sampled-data and event-triggered control of globally Lipschitz infinite-dimensional systems”. CDC 2025, Rio de Janeiro, 12/2025.
2. U. Sutulovic, D. Proverbio, **R. Katz** and G. Giordano, “Efficient gPC-based quantification of probabilistic robustness for systems in neuroscience”. ECC 2025, Thessaloniki, Greece, 06/2025.
3. **R. Katz**, G. Giordano and D. Batenkov, “Data-driven delay estimation in reaction-diffusion systems via Prony’s method”. TDS 2024. Udine, Italy, 09/2024.
4. D. Proverbio, **R. Katz** and G. Giordano, “Bridging Robustness and Resilience for Dynamical Systems in Nature”. MTNS 2024. Cambridge, UK, 08/2024.
5. A. Jbara, **R. Katz** and E. Fridman, “Stability by averaging of linear discrete-time systems”. ECC 2024, Stockholm, Sweden, 06/2024.
6. **R. Katz**, F. Mazenc and E. Fridman, “ISS of rapidly time-varying systems via a novel presentation and delay-free transformation”. CDC 2023. Singapore, 12/2023.
7. **R. Katz**, F. Mazenc and E. Fridman, “Stability by averaging via time-varying Lyapunov functions”. IFAC WC 2023. Yokohama, Japan, 07/2023.
8. C. Kitsos, **R. Katz** and E.Fridman, “Internal stabilization of three interconnected semilinear reaction-diffusion PDEs with one actuated state”. IFAC WC 2023. Yokohama, Japan, 07/2023.
9. **R. Katz**, E. Fridman and I. Basre, “Network-based deployment of multi-agents without communication of leaders with multiple followers: a PDE approach”. CDC 2022. Cancun, Mexico, 12/2022.
10. P. Wang, **R. Katz**, and E. Fridman, “Constructive method for boundary control of stochastic 1D parabolic PDEs”. MTNS 2022. Bayreuth, Germany, 09/2022.
11. **R. Katz** and E. Fridman, “Regional stabilization of the nonlinear 1D Kuramoto-Sivashinsky equation via modal decomposition”. ACC 2022. USA, 06/2022. Joint ACC/LCSS publication.
12. P. Wang, **R. Katz**, and E. Fridman, “Finite-dimensional observer-based control of 1D stochastic parabolic PDEs”. ACC 2022. USA, 06/2022.
13. **R. Katz** and E. Fridman, “Sub-predictors vs classical predictors for finite-dimensional observer-based control of parabolic PDEs”. CDC 2021. USA, 12/2021. Joint CDC/LCSS publication.
14. **R. Katz**, I. Basre and E. Fridman, “Delayed finite-dimensional observer-based control of 1D heat equation under Neumann actuation”. ECC 2021. The Netherlands, 06/2021.
15. **R. Katz** and E. Fridman, “Delayed Finite-Dimensional Observer-Based Control of 1-D Linear Heat Equation”. MTNS 2021. UK, 08/2021. Cancelled due to COVID-19.

16. **R. Katz** and E. Fridman, “Finite-Dimensional Observer-Based Control of the Kuramoto-Sivashinsky Equation Under Point Measurement and Actuation”. CDC 2020. South Korea, 12/2020.
17. **R. Katz** and E. Fridman, “Finite-Dimensional Observer-Based Controller for Linear 1-D Heat Equation: An LMI Approach”. IFAC WC 202. Germany, 07/2020.
18. **R. Katz**, E. Fridman and A. Selivanov, “Network-Based Boundary Observer-Controller Design for 1D Heat Equation”. CDC 2019. Nice, France, 12/2019.
19. **R. Katz**, M. Margaliot and E. Fridman, “On Totally Positive Discrete-Time Systems”. MED 2019. Akko, Israel, 07/2019

Conference Extended abstracts

1. **R. Katz**, G. Giordano and D. Batenkov, “Data-driven delay estimation in reaction-diffusion systems”. Automatica.it 2024, Bolzano, Italy, 09/2024.
2. **R. Katz** and E. Fridman, “Stability of linear systems with rapidly-varying delays on two time-scales via asymptotic averaging”. TDS 2024. Udine, Italy, 09/2024.
3. **R. Katz** and E. Fridman, “Global boundary stabilization of a semilinear heat equation via finite-dimensional nonlinear observers”. MTNS 2022. Bayreuth, Germany, 09/2022.