

Curriculum vitae

Zs. Lendek

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Experiență

- Octombrie 2020 – prezent: **Profesor universitar**, Departamentul de Automatică, UTCN, Romania
Cercetare și diseminare, propuneri de proiecte, predare, coordonare studenți licență, master, doctorat.
- Mai 2019: **Abilitare**, Departamentul de Automatică, UTCN, Romania.
- Octombrie 2011, Octombrie 2013 – Octombrie 2020 **Șef lucrări, Conferențiar universitar**, Departamentul de Automatică, UTCN, Romania
- Iunie 2011 – Octombrie 2011: **Cercetător postdoctoral**, LAMIH, University of Valenciennes, Franța.
- Martie 2009 – Martie 2011, **Cercetător postdoctoral**, DCSC, TU Delft, Olanda.
- Martie 2005 – Martie 2009, **Doctorand**, Delft Center for Systems and Control, Delft University of Technology, The Netherlands.
- Octombrie 2003 – Martie 2005, **Preparator**, Departamentul de Automatică, UTCN, Romania.
- Octombrie 2003 – Iunie 2004, Studii aprofundate în *Tehnici moderne în control automat*, Departamentul de Automatică, UTCN, Romania
- Octombrie 1998 – Iunie 2004, Licență în *Informatică*, Universitatea Babeș-Bolyai, Cluj-Napoca, Romania.
- Octombrie 1998 – Iunie 2003, Diplomă de inginer în *Automatică*, Universitatea Tehnică din Cluj-Napoca, Romania

Rezultate deosebite

- 2 cărți, publicate de Springer, 2 capitole de cărți publicate de Springer, peste 35 de lucrări de reviste internaționale (majoritatea ISI Q1), peste 80 lucrări de conferințe internaționale
- IEEE Computational Intelligence Society Technical Activities Chair on Fuzzy Systems
- Îndrumarea a 10 doctoranzi
- Program Vice-Chair AQTR 2026, Program Co-chair ICSTCC 2025, Special Session chair, Program and tutorial vice-chair la IEEE International Conference on Automation, Quality and Testing, Robotics, Cluj-Napoca, Romania.

- Coorganizator de sesiuni speciale la IFAC World Congress și IEEE World Congress on computational Intelligence/ IEEE International Conference on Fuzzy Systems din 2011 și până în prezent

Activități profesionale

Director sau responsabil de proiect

- 2021 – 2022, *HEROES: Controlul senzorilor mobili eterogeni pentru estimare optimă*, Proiect Tinere Echipe, PN-III-P1-1.1-TE-2019-1956, finanțat de către Autoritatea Națională pentru Cercetare Științifică, Director proiect
- 2018 – 2019, *REDOUBT - Reliable FPGA Datapath Design Using Control Techniques*, Agenția Spațială Europeană, contract nr. 4000123993/18/NL/CRS, Responsabil partener
- 2018 – 2020, *ECOPACE: Estimare și control pentru sisteme periodice cu întârzieri: Aplicație la optimizarea motoarelor*, Proiect Tinere Echipe, PN-III-P1-1.1-TE-2016-1265, finanțat de către Autoritatea Națională pentru Cercetare Științifică, Director proiect
- 2015 – 2017, *SMOOTHER: Tratarea efectelor ne-netede în controlul sistemelor robotice reale*, Proiect Tinere Echipe, PN-II-RU-TE-2014-4-0942, finanțat de către Autoritatea Națională pentru Cercetare Științifică, Director proiect
- 2011 – 2014, *Proiectarea estimatoarelor pentru sisteme dinamice distribuite cu structuri specifice*, Proiect Tinere Echipe, PN-II-RU-TE-2011-3-0043, finanțat de către Autoritatea Națională pentru Cercetare Științifică, Director proiect

Activități organizatorice și editoriale

- Associate Editor la Engineering Applications of Artificial Intelligence (din 2016), IEEE Transactions on Fuzzy Systems (din 2020), Advances in Computational Intelligence (din 2025), membră a consiliului editorial a Fuzzy Sets and Systems (din 2020)
- Special Session chair, Program and tutorial vice-chair la IEEE International Conference on Automation, Quality and Testing, Robotics, Cluj-Napoca, Romania, 2022, 2024, Program co-chair la 29th International Conference on System Theory, Control and Computing, 2025, Tutorial and Workshop Co-Chair la 2025 IEEE International Conference on Fuzzy Systems, etc.
- Co-organizator de sesiuni speciale la IFAC World Congress, IEEE World Congress on Computational Intelligence
- Recenzor pentru reviste și conferințe: Automatica, Engineering Applications of Artificial Intelligence, European Journal of Control, Evolving Systems, Fuzzy Sets and Systems, IEEE Transactions on Fuzzy Systems, IEEE Transactions on System, Man and Cybernetics, Part B, International Journal of Adaptive Control and Signal Processing, International Journal of Applied Mathematics & Computer Science, International Journal of Control, Automation, and Systems, International Journal of General Systems, Proceedings of the Institution of Mechanical Engineers, Sensors, Conference on Decision and Control, American Control Conference, IEEE Intelligent Vehicles Symposium, 2007, International Conference on Automation, Quality and Testing, Robotics, IEEE World Congress, IEEE International Conference on Fuzzy Systems, IFAC World Congress, Mediterranean Conference on Control and Automation, etc.

Predare

Predare cursuri, exerciții, coordonare proiecte, dezvoltare și coordonare examene:

- Estimatoare pentru controlul sistemelor dinamice, în limba română și engleză, UTCN, din 2018
- Optimizări, în limba română și engleză, UTCN, din 2011

Publicații

Cărți

- B-1. M. Bernal, A. Sala, Zs. Lendek, T. M. Guerra, “Analysis and Synthesis of Nonlinear Control Systems - A Convex Optimisation Approach”, Springer Cham, Series “Studies in Systems, Decision and Control”, vol. 408, 978-3-030-90772-3.
- B-2. Zs. Lendek, T. M. Guerra, R. Babuška, and B. De Schutter. “Stability analysis and nonlinear observer design using Takagi-Sugeno fuzzy models”, Springer Germany, Series “Studies in Fuzziness and Soft Computing”, Vol. 262, ISBN 978-3-642-16775-1.
- B-3. Zs. Lendek, Nonlinear control using TS models, UTPress, 2013
- B-4. Zs. Lendek, Optimization exercises, UTPress, 2013, ISBN 978-973-662-853-5

Capitole de cărți

- BC-1. V. Estrada-Manzo, Zs. Lendek, T. M. Guerra, Observer Design for Robotic Systems via Takagi-Sugeno Models and Linear Matrix Inequalities. In *Handling uncertainty and networked structure in robot control*, series Studies in Systems, Decision and Control, L. Busoniu and L. Tamas, Editors, pages 103-128. Springer International Publishing, 2015.
- BC-2. Zs. Lendek, P. Raica, J. Lauber, T. M. Guerra. “Observer design for discrete-time switching nonlinear models”, in *Hybrid Dynamical Systems*, series “Lecture Notes in Control and Information Sciences”, Volume 457, 2015, pp. 27-58

Articole de revistă

- J-1. A. Codrean, O. Stefan, Zs. Lendek, Networked control with anti-windup based resilience to cyberattacks. *International Journal of Systems Science*, 2026. Accepted.
- J-2. K. Li, K. Xiao, Y. Xia, Zs. Lendek, R. E. Precup, I.J. Rudas, Reinforcement Learning Control with Self-Regulated Prescribed Performance for Input-Saturated Systems under External Disturbances. *IEEE Transactions on Fuzzy Systems*, vol. 34, no. 8, pages 2423-2436, 2026.
- J-3. Y. Xia, J. He, Zs. Lendek, I.J. Rudas, R.K. Agarwal , Global Singularity-Free Prescribed Performance Control for Faulty Nonlinear Systems via Parameterized Nonmonotonic Constraints. *IEEE-CAA Journal of Automatica Sinica*, vol. 13, no. 5, pages 1176-1183, 2026.
- J-4. M. Susca, V. Mihaly, Zs. Lendek, I-C. Morarescu, P. Dobra, Controller redesign to minimize uniform quantization errors in uncertain linear systems with fixed hardware constraints. *Nonlinear Analysis: Hybrid Systems*, vol. 60, no. 101683, 2026.
- J-5. Y. Xia, Zs. Lendek, R.-E. Precup, , R.K. Agarwal, I.J. Rudas, Suction Cup-Type Prescribed Performance Fault-Tolerant Fuzzy Control for Nonlinear Systems Considering Actuator Power . *IEEE Transactions on Cybernetics*, vol. 56, no. 1, pages 347-356, 2026.
- J-6. X. Hu, Y. Xia, Zs. Lendek, J. Cao, R.-E. Precup, A novel dynamic prescribed performance fuzzy-neural backstepping control for PMSM under step load. *Neural Networks*, vol. 190, no. 107627, 2025.

- J-7. X. Lin, Y. Xia, Zs. Lendek, R.-E. Precup, I. Rudas, R.K. Agarwal, Type-2 Fuzzy Single Hidden Layer Recurrent Neural Adaptive Terminal Super-Twisting Control of Robot Joint. *IEEE Transactions on Fuzzy Systems*, vol. 33, no. 10, pages 3637-3650, 2025.
- J-8. M. Susca, V. Mihaly, Zs. Lendek, I-C. Morarescu, A Passivity Analysis Tool for Linear Clustered Multi-Agent Systems. *IEEE Control Systems Letters*, vol. 9, pages 739-744, 2025.
- J-9. X. Hu, Y. Xia, Zs. Lendek, J. Cao, R.-E. Precup, A novel dynamic prescribed performance fuzzy-neural backstepping control for PMSM under step load. *Neural Networks*, vol. 190, no. 107627, 2025.
- J-10. Y. Xia, Zs. Lendek, Z. Geng, J. Li, J. Wang, Adaptive Fuzzy Control for Stochastic Nonlinear Systems With Nonmonotonic Prescribed Performance and Unknown Control Directions. *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, vol. 55, no. 2, pages 1102-1115, 2025.
- J-11. B. Yousuf, R. Herzal, Zs. Lendek, and L. Busoniu, Multi-Agent Active Multi-Target Search with Intermittent Measurements. *Control Engineering Practice*, vol. 153, no. 106094, 2024.
- J-12. M. Susca, V. Mihaly, Zs. Lendek, I-C. Morarescu, Passivity of Linear Singularly Perturbed Systems. *IEEE Control Systems Letters*, vol. 8, pages 2105-2110, 2024.
- J-13. Y. Xia, K. Xiao, Y. Yao, Z. Geng, Zs. Lendek, Fixed-Time Fuzzy Vibration Reduction for Stochastic MEMS Gyroscopes with Low Communication Resources. *IEEE Transactions on Fuzzy Systems*, vol. 32, no. 8, pages 4220-4233, 2024.
- J-14. B. Yousuf, Zs. Lendek, and L. Busoniu, Exploration-Based Planning for Multiple-Target Search with Real-Drone Results. *Sensors*, vol. 24, no. 9, pages 2868, 2024.
- J-15. A. Matyas, Z. Nagy, Zs. Lendek, Stabilization of time-delay nonlinear systems using TS fuzzy models. *Fuzzy Sets and Systems*, vol. 480, no. 108861, pages 1-16, 2024.
- J-16. Z. Nagy, Zs. Lendek, L. Busoniu, "TS fuzzy observer-based controller design for a class of discrete-time nonlinear systems". *IEEE Transactions on Fuzzy Systems*, vol. 30, no. 2, pages 555-566, 2022.
- J-17. Zs. Lendek, J. Lauber, "Local stabilization of discrete-time nonlinear systems". *IEEE Transactions on Fuzzy Systems*, vol. 30, no. 1, pages 52-62, 2022.
- J-18. Z. Nagy, Zs. Lendek, L. Busoniu, "Observer design for a class of nonlinear systems with nonscalar-input nonlinear consequents". *IEEE Control Systems Letters*, vol. 54, no. 3, pages 971-976, 2021.
- J-19. O. Boncalo, A. Amaricai, Zs. Lendek, "Fault tolerant digital data-path design via control feedback loops". *Electronics*, vol. 9, no. 10, 2020.
- J-20. V. Estrada-Manzo, Zs. Lendek, T. M. Guerra, "An alternative LMI static output feedback control design for discrete-time nonlinear systems represented by Takagi-Sugeno models". *ISA Transactions*, vol. 84, pages 104-110, 2019.
- J-21. Zs. Lendek, Z. Nagy, J. Lauber, "Local stabilization of discrete-time TS descriptor systems". *Engineering Applications of Artificial Intelligence*, vol. 67, pages 409-418, 2018.
- J-22. Zs. Lendek, P. Raica, J. Lauber, T. M. Guerra, "Finding a stabilizing switching law for switching TS models". *International Journal of Systems Science*, vol. 47, pages 2762-2772, 2016.

- J-23. V. Estrada-Manzo, T. M. Guerra, Zs. Lendek, “Generalized observer design for discrete-time T-S descriptor models.” *Neurocomputing*, vol. 182, pages 210-220, 2016.
- J-24. V. Estrada-Manzo, Zs. Lendek, T. M. Guerra, Ph. Pudlo, “Controller design for discrete-time descriptor models: a systematic LMI approach.” *IEEE Transactions on Fuzzy Systems*, vol. 23, no. 5, pages 1608-1621, 2015.
- J-25. T. M. Guerra, V. Estrada-Manzo, Zs. Lendek, “Observer design for Takagi-Sugeno descriptor models: an LMI approach”. *Automatica*, vol. 52 , no. 2, pages 154-159, 2015.
- J-26. Zs. Lendek, T. M. Guerra, J. Lauber, “Controller design for TS models using non-quadratic Lyapunov functions”. *IEEE Transactions on Cybernetics*, vol. 45 , no. 3, pages 453-464, 2015.
- J-27. P. Stano, A. den Dekker, Zs. Lendek, R. Babuška. “Convex saturated particle filter”, *Automatica*, vol. 50 , no. 10, pages 2494-2503, 2014.
- J-28. Zs. Lendek, P. Raica, B. De Schutter, and R. Babuška. “Analysis and design for continuous-time string-connected TS systems”, *Journal of the Franklin Institute*, Volume 351, 2014, Pages 3577-3592.
- J-29. Zs. Lendek, A. Sala, P. García, R. Sanchis. “Experimental application of Takagi-Sugeno observers and controllers in a 3DOF quadrotor”, *Journal of Control Engineering and Applied Informatics*, Volume 15, December 2013, Pages 3-14.
- J-30. P. Stano, Zs. Lendek, J. Braaksma, R. Babuška, and C. de Keizer. “Parametric Bayesian adaptive filters for nonlinear dynamical systems: A survey”, *IEEE Transactions on Cybernetics*, Volume 43, December 2013, Pages 1607-1624.
- J-31. Zs. Lendek, J. Lauber, and T. M. Guerra. “Periodic Lyapunov functions for periodic TS systems”, *Systems & Control Letters*, Volume 62, Issue 4, April 2013, Pages 303-310.
- J-32. P. Stano, Zs. Lendek, and R. Babuška, “Saturated Particle Filter: Almost Sure Convergence and Improved Resampling”, *Automatica*, Volume 49, Issue 1, January 2013, Pages 147–159.
- J-33. Zs. Lendek, R. Babuška, and B. De Schutter. “Sequential stability analysis and observer design for distributed TS fuzzy systems”, *Fuzzy Sets and Systems*, Volume 174, Issue 1, August 2011, Pages 1–30.
- J-34. A. B. Cara, H. Pomares, I. Rojas, Zs. Lendek, and R. Babuka. “Online Self-Evolving Fuzzy Controller with Global Learning Capabilities”, *Evolving Systems*, Volume 1, Issue 4, 2010, Pages 225-239.
- J-35. Zs. Lendek, R. Babuška, and B. De Schutter. “Stability bounds for fuzzy estimation and control”, *Journal of Control Engineering and Applied Informatics*, Volume 12, Issue 3, September 2010, Pages 3–12.
- J-36. Zs. Lendek, J. Lauber, T. M. Guerra, R. Babuška, and B. De Schutter. “Adaptive observers for TS fuzzy systems with unknown polynomial inputs”, *Fuzzy Sets and Systems*, Volume 161, Issue 15, August 2010, Pages 2043–2065.
- J-37. Zs. Lendek, R. Babuška, and B. De Schutter. “Stability of cascaded fuzzy systems and observers”, *IEEE Transactions on Fuzzy Systems*, Volume 17, Issue 3, June 2009, Pages 641–653.

- J-38. Zs. Lendek, R. Babuška, J. Braaksma, and C. de Keizer. “Decentralized estimation of overflow losses in a hopper-dredger”. *Control Engineering Practice*, Volume 16, Issue 4, April 2008, Pages 392–406.
- J-39. Zs. Lendek, R. Babuška, and B. De Schutter. “Distributed Kalman filtering for cascaded systems”. *Engineering Applications of Artificial Intelligence*, Volume 21, Issue 3, April 2008, Pages 457–469.

Refereed publications, conferences

- C-1. B. A. Lazar, Zs. Lendek, Maximizing Guaranteed Inter-Event Time in Control of TS Fuzzy Systems. In IFAC World Congress, pages 1257-1262, Busan, Republic of Korea, August 2026.
- C-2. B. Yousuf, Zs. Lendek, L. Busoniu, Fast Neural-Network Approximation of Active Target Search Under Uncertainty. In IFAC World Congress, pages 6768-6773, Busan, Republic of Korea, August 2026.
- C-3. O.I. Rad, A. R. Dontu, A. Codrean, O. Stefan, I. Codrean, Zs. Lendek, Control and communication co-design for a PX4-based small drone . In Proceedings of the 2026 Asian Control Conference, pages 1-6, Bali, Indonesia, June 2026.
- C-4. S.-D. Sim, Zs. Lendek, M. Susca, V. Mihaly, P. Dobra, P. Tucan, Robot Control for Rehabilitation: PD Vs. LQG. In 2026 IEEE International Conference on Automation, Quality and Testing, Robotics, pages 1-6, Baile Felix, Romania, May 2026.
- C-5. A. Codrean, O. Stefan, R.R. Pascalau, Zs. Lendek, Resilient control of a small drone to man-in-the-middle cyberattacks. In IECON 2025 - 51st Annual Conference of the IEEE Industrial Electronics Society, pages 1-6, Madrid, Spain, October 2025.
- C-6. S.-D. Sim, Zs. Lendek, V. Mihaly, M. Susca, A. Medgyesi, A. E. Pica, D. Pislă, C.-L. Vaida, P. Dobra, Online identification using Markov coefficients: application to a DC motor. In 29th International Conference on System Theory, Control and Computing, pages 1-6, Cluj-Napoca, Romania, October 2025.
- C-7. V.-M. Maer, S. Pirje, Zs. Lendek, D. Tolic, A. Duras, V. Prkacin, I. Palunko, L. Busoniu, Two-Channel Extended Kalman Filtering with Intermittent Measurements. In 2024 American Control Conference, pages 1202-1209, Toronto, Canada, July 2024.
- C-8. A. Codrean, A. Kovacs, O. Stefan, Zs. Lendek, Networked control of a Parrot Mambo drone. In ISIE 2024 - 33rd International Symposium on Industrial Electronics, pages 1-7, Ulsan, South Korea, June 2024.
- C-9. S.-D. Sim, A. Medgyesi, Zs. Lendek, C.-L. Vaida, V. Mihaly, M. Susca, P. Dobra, J. Machado, Robotic platform for position control of a ball. Accepted 33th International Conference on Robotics in Alpe-Adria-Danube Region, pages 503-509, Cluj-Napoca, Romania, June 2024.
- C-10. S.-D. Sim, A. Medgyesi, Zs. Lendek, M. Susca, V. Mihaly, D. Pislă, C.-L. Vaida, P. Dobra, A.-E. Pica, Adaptive filters for DC motor identification: a case study. In 2024 IEEE International Conference on Automation, Quality and Testing, Robotics, pages 1-6, Cluj-Napoca, Romania, May 2024.
- C-11. B. Lazar, Zs. Lendek, Sliding mode observer based fuzzy control for TS systems. In 2023 IEEE Symposium Series on Computational Intelligence, pages 1257-1262, Mexico City, Mexico, December 2023.

- C-12. S.-D. Sim, Zs. Lendek, P. Dobra, Analysis of the quantization effects in the implementation of numerical filters. In 2023 26th International Conference on System Theory, Control and Computing (ICSTCC), pages 227-232, Timisoara, Romania, October 2023.
- C-13. B. Yousuf, Zs. Lendek, L. Busoniu, Multi-Agent Exploration-Based Search for an Unknown Number of Targets. In Preprints of the 22nd IFAC World Congress, pages 5999-6004, Yokohama, Japan, July 2023.
- C-14. B. Suto, A. Codrean, Zs. Lendek, Optimal control of multiple drones for obstacle avoidance. In Preprints of the 22nd IFAC World Congress, pages 5980-5986, Yokohama, Japan, July 2023.
- C-15. B. Lazar, Zs. Lendek, Observer based guaranteed cost control for time-delay TS fuzzy systems. In 2022 26th International Conference on System Theory, Control and Computing (ICSTCC), pages 117-122, Sinaia, Romania, October 2022.
- C-16. B. Sutõ, Zs. Lendek, "Switching control of a rotary inverted pendulum". In 2022 26th International Conference on System Theory, Control and Computing (ICSTCC), pages 111-116, Sinaia, Romania, October 2022.
- C-17. B. Lazar, Zs. Lendek, "Observer based guaranteed cost control for time-delay TS fuzzy systems". In 2022 26th International Conference on System Theory, Control and Computing (ICSTCC), pages 117-122, Sinaia, Romania, October 2022.
- C-18. B. Yousuf, Zs. Lendek, L. Busoniu, "Exploration-based search for an unknown number of targets using a UAV". In 6th IFAC International Conference on Intelligent Control and Automation Sciences, pages 1-6, Cluj-Napoca, Romania, July 2022.
- C-19. S.-D. Sim, Zs. Lendek, P. Dobra, "Implementation and Testing of Digital Filters on STM32 Nucleo-64P". In IEEE International Conference on Automation, Quality and Testing, Robotics, AQTR, pages 1-6, Cluj-Napoca, Romania, May 2022.
- C-20. Zs. Lendek, "Observer design using Takagi-Sugeno fuzzy models". In Rencontres franco-phones sur la logique floue et ses applications, pages 12-18, Paris, France, October 2021.
- C-21. A. Matyas, Zs. Lendek, "Observer design for a class of nonlinear systems with nonscalar-input nonlinear consequents". In 4th IFAC Conference on Embedded Systems, Computational Intelligence and Telematics in Control (CESCIT), pages 62-67, Valenciennes, France, July 2021.
- C-22. Z. Nagy, Zs. Lendek, L. Busoniu, "Observer design for a class of nonlinear systems with nonscalar-input nonlinear consequents". In 2020 59th IEEE Conference on Decision and Control, pages 1-6, Jeju, Republic of Korea, December 2020. Joint L-CSS - CDC submission.
- C-23. A. Matyas, Z. Nagy, Zs. Lendek, "Controller design for time-delay TS fuzzy systems with nonlinear consequents". In 2020 IEEE World Congress on Computational Intelligence, IEEE International Conference on Fuzzy Systems, pages 1-6, Glasgow, UK, July 2020.
- C-24. Z. Nagy, A. Matyas, Zs. Lendek, "Stabilization of TS fuzzy systems with time-delay and nonlinear consequents". In 2020 IFAC World Congress, pages 1-6, Berlin, Germany, July 2020.
- C-25. Z. Nagy, Zs. Lendek, L. Busoniu, "Control and estimation for mobile sensor-target problems with distance-dependent noise". In 2020 American Control Conference, pages 2574-2579, Denver, Colorado, USA, July 2020.

- C-26. Z. Nagy, Zs. Lendek, "Observer design for discrete-time TS fuzzy systems with local nonlinearities". In *2020 European Control Conference*, pages 1-6, Saint Petersburg, Russia, May 2020.
- C-27. O. Boncalo, A. Amaricai, Zs. Lendek, "Configurable hardware accelerator architecture for Takagi-Sugeno fuzzy controller". In *Proceedings of the 2019 Euromicro Conference on Digital System Design*, pages 96-101, Chalkidiki, Greece, August 2019.
- C-28. Z. Nagy, Zs. Lendek, "Observer-based controller design for Takagi-Sugeno fuzzy systems with local nonlinearities". In *Proceedings of the 2019 IEEE International Conference on Fuzzy Systems*, pages 1-6, New Orleans, USA, June 2019.
- C-29. T. Laurain, Zs. Lendek, J. Lauber, R. M. Palhares, "Transforming variable transport delays into fixed ones: An application to a conveyor belt problem". In *Proceedings of the 2018 Annual American Control Conference (ACC)*, pages 3969-3974, Milwaukee, WI, USA, June 2018.
- C-30. T. Laurain, J. Lauber, Zs. Lendek, R. M. Palhares, "Air-fuel ratio fuzzy controller handling delay: Comparison with a PI/Smith". In *Proceedings of the 2018 IEEE International Conference on Automation, Quality and Testing, Robotics (AQTR)*, pages 1-6, Cluj-Napoca, Romania, May 2018.
- C-31. Z. Nagy, E. Pall, Zs. Lendek, "Unknown input observer for a robot arm using TS fuzzy descriptor models". In *Proceedings of the 2017 IEEE Conference on Control Technology and Applications*, pages 939-944, Hawaii, USA, August 2017.
- C-32. T. Laurain, Zs. Lendek, J. Lauber, R. M. Palhares, "A new air-fuel ratio model fixing the transport delay: validation and control". In *Proceedings of the 2017 IEEE Conference on Control Technology and Applications*, pages 1904-1909, Hawaii, USA, August 2017.
- C-33. T. Laurain, Zs. Lendek, J. Lauber, R. M. Palhares, "Transformer les retards de transport variables en retards fixes: Une application au probleme du convoyeur (in French)". In *Proceedings of the 2017 Rencontre sur la Logique Floue et ses Applications*, pages 1-8, Amiens, France, October 2017.
- C-34. B. Marx, Zs. Lendek, "Local observer design for discrete-time TS systems". In *Preprints of the 2017 IFAC World Congress*, pages 873-878, Toulouse, France, July 2017.
- C-35. Z. Nagy, Zs. Lendek, "Quadcopter modeling and control". In *Proceedings of the Journees Francophones sur la Planification, la Decision et l'Apprentissage pour la conduite de systemes*, pages 1-2, Caen, France, July 2017.
- C-36. S. Beyhan, F. Sarabi, Zs. Lendek, R. Babuska, "Takagi-Sugeno fuzzy payload estimation and adaptive control". In *Preprints of the 2017 IFAC World Congress*, pages 867-872, Toulouse, France, July 2017.
- C-37. Zs. Lendek, J. Lauber, Local quadratic and nonquadratic stabilization of discrete-time TS fuzzy systems. In *Proceedings of the 2016 IEEE World Congress on Computational Intelligence*, pages 1-6, Vancouver, Canada, July 2016.
- C-38. Zs. Lendek, J. Lauber, Local stability of discrete-time TS fuzzy systems. In *Proceedings of the 4th IFAC International Conference on Intelligent Control and Automation Sciences*, pages 1-6, Reims, France, June 2016.

- C-39. N. Hodasz, V. Bradila, I. Nascu, Zs. Lendek, Modeling and parameter estimation for an activated sludge wastewater treatment process. In *Proceedings of the 2016 IEEE International Conference on Automation, Quality and Testing, Robotics*, pages 1-6, Cluj-Napoca, Romania, May 2016.
- C-40. V. Estrada-Manzo, Zs. Lendek, T. M. Guerra, Unknown input estimation for nonlinear descriptor systems via LMIs and Takagi-Sugeno models. In *Proceedings of the 54th IEEE Conference on Decision and Control*, pages 1-6, Osaka, Japan, December 2015.
- C-41. V. Estrada-Manzo, T. M. Guerra, Zs. Lendek, Static output feedback control for continuous-time TS descriptor models: decoupling the Lyapunov function. In *Proceedings of the 2015 IEEE International Conference on Fuzzy Systems*, pages 1-6, Istanbul, Turkey, August 2015.
- C-42. V. Estrada-Manzo, Zs. Lendek, T. M. Guerra, Improving the observer design for discrete-time TS descriptor models under the quadratic framework. In *Proceedings of the IFAC Conference on Embedded Systems, Computational Intelligence and Telematics in Control*, pages 1-6, Maribor, Slovenia, June 2015.
- C-43. V. Estrada-Manzo, Zs. Lendek, T. M. Guerra, An LMI approach for observer design for Takagi-Sugeno descriptor models. In *Proceedings of the 53rd IEEE Conference on Decision and Control*, pages 860-865, Los Angeles, CA, USA, December 2014.
- C-44. V. Estrada-Manzo, Zs. Lendek, T. M. Guerra, “ H_∞ control for discrete-time Takagi-Sugeno descriptor models: a delayed approach”. *23e Rencontres Francophones sur la Logique Floue et ses Applications*, Ajaccio, France, October 2014.
- C-45. V. Estrada-Manzo, Zs. Lendek, T. M. Guerra, “An LMI approach for observer design for Takagi-Sugeno descriptor models”. *53rd IEEE Conference on Decision and Control*, Los Angeles, CA, USA, December 2014.
- C-46. Zs. Lendek, P. Raica, J. Lauber, and T. M. Guerra. “Nonquadratic stabilization of switching TS systems”, *Preprints of the 2014 IFAC World Congress*, pages 7970-7975, Cape Town, South Africa, August 2014, **invited paper**.
- C-47. V. Estrada-Manzo, Zs. Lendek, T. M. Guerra. “Discrete-time Takagi-Sugeno descriptor models: observer design”, *Preprints of the 2014 IFAC World Congress*, pages 7965-7969, Cape Town, South Africa, August 2014, **invited paper**.
- C-48. Zs. Lendek, P. Raica, J. Lauber, and T. M. Guerra. “Observer design for switching nonlinear systems”, *Proceedings of the 2014 IEEE World Congress on Computational Intelligence*, pages 1-6, Beijing, China, July 2014, **invited paper**.
- C-49. V. Estrada-Manzo, T. M. Guerra, Zs. Lendek, Ph. Pudlo. “Discrete-time Takagi-Sugeno descriptor models: controller design”, *Proceedings of the 2014 IEEE World Congress on Computational Intelligence*, pages 1-5, Beijing, China, July 2014, **invited paper**.
- C-50. V. Estrada-Manzo, T. M. Guerra, Zs. Lendek. “An LMI approach for observer design for Takagi-Sugeno descriptor models”. *Proceedings of the 2014 IEEE International Conference on Automation, Quality and Testing, Robotics*, pages 1-6, Cluj-Napoca, Romania, May 2014.
- C-51. Zs. Lendek, J. Lauber, T. M. Guerra, and P. Raica. “Stability analysis of switching TS models using α -samples approach”, *Proceedings of the 3rd IFAC International Conference on Intelligent Control and Automation Science*, pages 207-211, Chengdu, China, September 2013, **invited paper**.

- C-52. P. Petrehuş, Zs. Lendek, and P. Raica. “Fuzzy modeling and control of a 3D crane”, *Proceedings of the 3rd IFAC International Conference on Intelligent Control and Automation Science*, pages 201–206, Chengdu, China, September 2013, **invited paper**.
- C-53. Zs. Lendek, J. Lauber, T. M. Guerra, and P. Raica. “On stabilization of discrete-time periodic TS systems”, *Proceedings of the 2013 IEEE International Conference on Fuzzy Systems*, pages 1–6, Hyderabad, India, July 2013, **invited paper**.
- C-54. V. Estrada-Manzo, T. M. Guerra, Zs. Lendek, and M. Bernal. “Improvements on non-quadratic stabilization of continuous-time Takagi-Sugeno descriptor models”, *Proceedings of the 2013 IEEE International Conference on Fuzzy Systems*, pages 1–6, Hyderabad, India, July 2013, **invited paper**.
- C-55. S. Bindiganavile Nagesh, Zs. Lendek, A. A. Khalate, and R. Babuška. “Adaptive fuzzy observer and robust controller for a 2-DOF robot arm”. *IEEE World Congress on Computational Intelligence*, pages 149–155, Brisbane, Australia, June 2012, **invited paper**.
- C-56. Zs. Lendek, T. M. Guerra, and J. Lauber. “Construction of extended Lyapunov functions and control laws for discrete-time TS systems”. *IEEE World Congress on Computational Intelligence*, pages 286–291, Brisbane, Australia, June 2012, **invited paper**.
- C-57. Zs. Lendek, T. M. Guerra, and J. Lauber. “Switching fuzzy observers for periodic TS systems”. *2012 IEEE International Conference on Automation, Quality and Testing, Robotics*, Cluj, Romania, May 2012.
- C-58. Zs. Lendek, J. Lauber, and T. M. Guerra. “Switching Lyapunov functions for periodic TS systems”. accepted to the *1st IFAC Conference on Embedded Systems, Computational Intelligence and Telematics in Control*, Würzburg, Germany, April 2012.
- C-59. Zs. Lendek, A. Bernal, J. Guzmán-Giménez, A. Sala, P. García. “Application of Takagi-Sugeno observers for state estimation in a quadrotor”. *50th IEEE Conference on Decision and Control and European Control Conference*, pages 2278–2283, Orlando, Florida, December 2011.
- C-60. S. Beyhan, Zs. Lendek, R. Babuška, M. Wisse, M. Alci. “Control of a Robot Manipulator with Varying Payload Mass”. *50th IEEE Conference on Decision and Control and European Control Conference*, pages 2278–2283, Orlando, Florida, December 2011.
- C-61. Zs. Lendek, R. Babuška, and B. De Schutter. “Stability analysis and observer design for string-connected TS systems”. *Preprints of the IFAC World Congress*, pages 12795–12800, Milano, Italy, September 2011, **invited paper**.
- C-62. P. Stano, Zs. Lendek, R. Babuška. “Saturated particle filter”. *Proceedings of the 2011 American Control Conference*, pages 1819–1824, San Francisco, California, USA, June 2011.
- C-63. S. Beyhan, M. Alci, Zs. Lendek, and R. Babuška. “TS bulanik gözetleyici bilinmeyen yük tahmini ve servo sistem kontrolü”, *Proceedings of the National Meeting of the Turkish National Committee of Automatic Control*, pages 315–320, Izmir, Turkey, September 2011.
- C-64. Z. Hidayat, Zs. Lendek, R. Babuška, and B. De Schutter. “Fuzzy observer for state estimation of the METANET traffic model”. *Proceedings of the 13th International IEEE Conference on Intelligent Transportation Systems*, pages 19–24, Madeira, Portugal, September 2010.

- C-65. P. Stano, Zs. Lendek, R. Babuška, J. Braaksma, and C. de Keizer. “Particle filters for the estimation of the average grain diameter of the material excavated by a hopper dredger”. *Proceedings of the 2010 Multiconference on Systems and Control*, pages 292–297, Yokohama, Japan, September 2010.
- C-66. A. Belén Cara, Zs. Lendek, R. Babuška, H. Pomares, and I. Rojas. “Online self-organizing adaptive fuzzy controller: application to a nonlinear servo system”, *Proceedings of the IEEE World Congress on Computational Intelligence*, pages 2491–2498, Barcelona, Spain, July 2010, **invited paper**.
- C-67. Zs. Lendek, T. M. Guerra, and R. Babuška. “On non-PDC local observers for TS fuzzy systems”, *Proceedings of the IEEE World Congress on Computational Intelligence*, pages 2436–2442, Barcelona, Spain, July 2010, **invited paper**.
- C-68. Zs. Lendek, R. Babuška, and B. De Schutter. “Fuzzy models and observers for freeway traffic state tracking”, *Proceedings of the American Control Conference*, pages 2278–2283, Baltimore, Maryland, USA, July 2010, **invited paper**.
- C-69. Zs. Lendek, R. Babuška, and B. De Schutter. “Stability bounds for fuzzy estimation and control – Part II: Output-feedback control”, *Proceedings of the 2010 IEEE International Conference on Automation, Quality and Testing, Robotics*, pages 1–6, Cluj, Romania, May 2010, **Award: best paper in the track “Control Systems”**
- C-70. Zs. Lendek, R. Babuška, and B. De Schutter. “Stability bounds for fuzzy estimation and control – Part I: State estimation”, *Proceedings of the 2010 IEEE International Conference on Automation, Quality and Testing, Robotics*, pages 1–6, Cluj, Romania, May 2010, **Award: best paper in the track “Control Systems”**.
- C-71. H. Kerkeni, J. Lauber, Zs. Lendek, and T. M. Guerra. “Individual cylinder air/fuel ratio observer on IC engine using Takagi-Sugeno’s fuzzy model”, In *Proceedings of the 2008 IEEE Vehicle Power and Propulsion Conference*, pages 1–6, Harbin, China, September 2008.
- C-72. H. Kerkeni, J. Lauber, Zs. Lendek, and T. M. Guerra. “Estimation de la richesse par cylindre dun moteur a combustion interne”, *Proceedings of Conference Internationale Francophone d’Automatique*, pages 1–6, Bucharest, Romania, September 2008.
- C-73. Zs. Lendek, K. M. van Schagen, R. Babuška, A. Veersma, and B. De Schutter. “Cascaded parameter estimation for a water treatment plant using particle filters”, In *Preprints of the IFAC World Congress*, pages 10857–10862, Seoul, Korea, July 2008.
- C-74. Zs. Lendek, R. Babuška, and B. De Schutter. “Stability analysis and observer design for decentralized TS fuzzy systems”, *Proceedings of the IEEE World Congress on Computational Intelligence*, pages 631–636, Hong Kong, China, June 2008, **invited paper**.
- C-75. Zs. Lendek, R. Babuška, and B. De Schutter. “TS fuzzy controllers for cascaded systems”. In Guerra, T. M., editor, *Proceedings of 3rd IFAC Workshop on Advanced Fuzzy and Neural Control*, pages 1–6, Valenciennes, France, October 2007.
- C-76. Zs. Lendek, R. Babuška, and B. De Schutter. “Stability of cascaded Takagi-Sugeno fuzzy systems”. In *Proceedings of IEEE International Conference on Fuzzy Systems*, pages 505–510, London, UK, July 2007.

- C-77. Zs. Lendek, R. Babuška, and B. De Schutter. “Distributed Kalman filtering for multi-agent systems”. In *Proceedings of the European Control Conference*, pages 2193–2200, Kos, Greece, July 2007.
- C-78. A. Hegyi, L. Mihaylova, R. Boel, and Zs. Lendek. “Parallelized particle filtering for freeway traffic state tracking”. In *Proceedings of the European Control Conference*, pages 2442–2449, Kos, Greece, July 2007.
- C-79. R. Babuška, Zs. Lendek, J. Braaksma, and C. de Keizer. “Particle filtering for on-line estimation of overflow losses in a hopper dredger”. In *Proceedings of the American Control Conference*, pages 5751–5756, Minneapolis, Minnesota, USA, June 2006.
- C-80. Zs. Lendek, P. Raica. “Numerical simulation of ^{15}N isotope separation processes by ion-exchange”. In *Proceedings of the 2004 IEEE-TTTC International Conference on Automation, Quality and Testing, Robotics*, Cluj-Napoca, Romania, May 2004.

Theses and dissertations

- T-1. Zs. Lendek. “Takagi-Sugeno model-based design for switching systems and local stabilization”, Habilitation thesis, Technical University of Cluj-Napoca, Romania, 2019.
- T-2. Zs. Lendek. “Distributed fuzzy and stochastic observers for nonlinear systems”, PhD thesis, ISBN 978-90-9023990-3, 186 pages, Delft University of Technology, The Netherlands, 2009
- T-3. Zs. Lendek. “Modeling and dynamical simulation of chromatographic separation processes”, postgraduate thesis (in Romanian), Technical University of Cluj-Napoca, Romania, 2004.
- T-4. Zs. Lendek. “Vowel recognition using neural networks”, BSc. thesis (in Hungarian), Babeş-Bolyai University of Cluj-Napoca, Romania, 2004.
- T-5. Zs. Lendek. “Modeling and simulation of the ^{15}N isotopes separation process by ion-exchange”, MSc. thesis (in Romanian), Technical University of Cluj-Napoca, Romania, 2003.

SEMĂNĂTURĂ OLOGRAFĂ REDACTATĂ

