

Márcio J. Lacerda

CURRICULUM VITAE

Personal

Family name: Lacerda
First name: Márcio
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Professional Experience

18/08/2016 – Present – Professor
Department of Electrical Engineering, Federal University of São João del-Rei - UFSJ, MG, Brazil

01/08/2015 – 31/07/2016 – Postdoctoral Researcher
Department of Aerospace Engineering and Mechanics, University of Minnesota, MN, USA.
Supervisor: Prof. Peter Seiler

01/06/2014 – 31/07/2015 – Postdoctoral Researcher
School of Electrical and Computer Engineering, University of Campinas - UNICAMP, SP, Brazil.
Supervisor: Prof. Pedro L. D. Peres

Education

Ph.D Electrical Engineering

01/11/2010 – 30/05/2014 – School of Electrical and Computer Engineering, University of Campinas, UNICAMP, Brazil. Adviser: Prof. Pedro L. D. Peres
Thesis: Contributions to the \mathcal{H}_∞ filtering problem for dynamical systems.

01/10/2012 – 30/04/2013 – Laboratoire d'Analyse et d'Architecture des Systèmes, LAAS, Toulouse, France.
Supervisor: Dra. Sophie Tarbouriech

M. Sc. Electrical Engineering

01/08/2009 – 27/10/2010 – School of Electrical and Computer Engineering, University of Campinas, UNICAMP, Brazil. Adviser: Prof. Pedro L. D. Peres
Thesis: Robust filtering of linear time invariant systems by means of polynomial Lyapunov functions.

B. Sc. Electrical Engineering

01/03/2005 – 04/07/2009 – Department of Electrical Engineering, Federal University of São João del-Rei, UFSJ, Brazil

Journal Publications¹

- J32 J. F. V. D. Moreira[†] and **M. J. Lacerda**. “State-feedback control for cyber-physical discrete-time systems under replay attacks: an LMI approach,” *Mathematical Problems in Engineering*, pp. 1–9, 2022.
- J31 M. L. C. Peixoto and P. H. S. Coutinho and **M. J. Lacerda** and R. M. Palhares. “Guaranteed region of attraction estimation for time-delayed fuzzy systems via static output-feedback control,” *Automatica*, vol. 143, pp. 1–5, 2022.
- J30 G. O. Ferreira[†] and L. S. Figueiredo and **M. J. Lacerda** and V. J. S. Leite. “ISS control for continuous-time systems with filtered time-varying parameter and saturating actuators,” *Asian Journal of Control*, to appear.
- J29 P. M. Oliveira[†] and J. M. Palma and **M. J. Lacerda**. “ \mathcal{H}_2 state-feedback control for discrete-time cyber-physical uncertain systems under DoS attacks,” *Applied Mathematics and Computation*, vol. 425, pp. 1–13, 2022.
- J28 L. S. Figueiredo[†] and **M. J. Lacerda** and V. J. S. Leite. “Design of saturating state feedback control laws for discrete time linear parameter varying systems through homogeneous polynomial parameter dependent functions,” *International Journal of Robust and Nonlinear Control*, vol. 31, no. 14, pp. 6585–6601, 2021.
- J27 P. S. P. Pessim[†] and **M. J. Lacerda**. “On the robustness of Cyber-physical LPV systems under DoS attacks,” *Journal of the Franklin Institute*, vol. 359, no. 2, pp. 677–696, 2022.
- J26 R. B. P. Bastos and C. M. Agulhari and **M. J. Lacerda**. “Mixed $\mathcal{H}_2/\mathcal{H}_\infty$ control for time-delayed sampled-data LPV systems,” *Journal of Control, Automation and Electrical systems*, vol. 32, pp. 1449–1462, 2021.
- J25 P. S. P. Pessim[†] and M. L. C. Peixoto and R. M. Palhares and **M. J. Lacerda**. “Static output-feedback control for Cyber-physical LPV systems under DoS attacks.” *Information Sciences*, vol. 563, pp. 241–255, 2021.
- J24 C. M. Agulhari and J. M. M. Neto and **M. J. Lacerda** and R. P. P. Souza and M. F. Castoldi and A. Goedel, “Robust real time parameter estimation for linear systems affected by external noises and uncertainties,” *International Journal of Adaptive Control and Signal Processing*, vol. 35, no. 2, pp. 203–220, 2021.
- J23 P. S. P. Pessim[†] and **M. J. Lacerda**. “State-Feedback Control for Cyber-Physical LPV Systems Under DoS Attacks,” *IEEE Control Systems Letters*, vol. 5, no. 3, pp. 1043–1048, 2021.
- J22 M. L. C. Peixoto and **M. J. Lacerda** and R. M. Palhares. “On Discrete-Time LPV Control Using Delayed Lyapunov Functions,” *Asian Journal of Control*, vol. 23, no. 5, pp. 2359–2369, 2021.

^{1†} indicate Master’s students formally advised or co-advised.

- J21 N. A. Keles[†] and C. M. Agulhari and **M. J. Lacerda**. “Stability analysis and robust performance of periodic discrete-time uncertain systems via structured Lyapunov functions,” *European Journal of Control*, vol. 58, pp. 74–81, 2021.
- J20 P. H. S. Coutinho and M. L. C. Peixoto and **M. J. Lacerda** and M. Bernal and R. M. Palhares. “Generalized non-monotonic Lyapunov functions for analysis and synthesis of Takagi-Sugeno systems,” *Journal of Intelligent & Fuzzy Systems*, vol. 39, no. 3, pp. 4147–4158, 2020.
- J19 M. L. C. Peixoto and P. S. P. Pessim[†] and **M. J. Lacerda** and R. M. Palhares. “Stability and Stabilization for LPV systems based on Lyapunov functions with non-monotonic terms,” *Journal of the Franklin Institute*, vol. 357, no. 11, pp. 6595–6614, 2020.
- J18 **M. J. Lacerda** and T. S. Gomide[†]. “Stability and stabilisability of switched discrete-time systems based on structured Lyapunov functions,” *IET Control Theory & Applications*, vol. 14, pp. 781–789, 2020.
- J17 C. M. Agulhari and **M. J. Lacerda**. “Observer-based state-feedback control design for LPV periodic discrete-time systems,” *European Journal of Control*, vol. 49, pp. 1–14, 2019.
- J16 W. R. Lacerda Junior and S. A. M. Martins and E. G. Nepomuceno and **M. J. Lacerda**. “Control of Hysteretic Systems Through an Analytical Inverse Compensation Based on a NARX Model,” *IEEE Access*, vol. 7, pp. 98228–98237, 2019.
- J15 L. Frezzatto and **M. J. Lacerda** and R. C. L. F. Oliveira, and P. L. D. Peres, “ \mathcal{H}_2 and \mathcal{H}_∞ fuzzy filters with memory for Takagi-Sugeno discrete-time systems,” *Fuzzy Sets and Systems*, vol. 371, pp. 78–95, 2019.
- J14 P. S. P. Pessim[†] and V. J. S. Leite and **M. J. Lacerda**, “Robust performance for uncertain systems via Lyapunov functions with higher order terms,” *Journal of the Franklin Institute*, vol. 356, pp. 3072–3089, 2019.
- J13 N. A. Keles[†] and **M. J. Lacerda** and C. M. Agulhari. “Robust performance and observer based control for periodic discrete-time uncertain systems,” *Mathematical Problems in Engineering*, 2019.
- J12 **M. J. Lacerda** and S. A. M. Martins and E. G. Nepomuceno. “Structure selection based on interval predictor model for recovering static nonlinearities from chaotic data,” *IET Control Theory & Applications*, vol. 12, pp. 1889–1894, 2018.
- J11 E. G. Nepomuceno and S. A. M. Martins and **M. J. Lacerda** and E. M. A. M. Mendes. “On the Use of Interval Extensions to Estimate the Largest Lyapunov Exponent from Chaotic Data,” *Mathematical Problems in Engineering*, pp. 1–8, 2018.
- J10 M. L. C. Peixoto and E. G. Nepomuceno and S. A. M. Martins and **M. J. Lacerda**. “Computation of the largest positive Lyapunov exponent using rounding mode and recursive least square algorithm,” *Chaos Solitons & Fractals*, vol. 112, pp. 36–43, 2018.
- J9 **M. J. Lacerda** and P. Seiler. “Stability of uncertain systems using Lyapunov functions with non-monotonic terms,” *Automatica*, vol. 82, pp. 187–193, 2017.
- J8 B. Hu and **M. J. Lacerda** and P. Seiler, “Robustness Analysis of Uncertain Discrete-Time Systems with Dissipation Inequalities and Integral Quadratic Constraints,” *International Journal of Robust and Nonlinear Control*, vol. 27, no. 11, pp. 1940–1962, 2017.

- J7 **M. J. Lacerda**, “Filter design for continuous-time linear systems subject to sensor saturation,” *Mathematical Problems in Engineering*, pp. 1–8, 2017.
- J6 **M. J. Lacerda** and E. S. Tognetti and R. C. L. F. Oliveira and P. L. D. Peres, “A new approach to handle additive and multiplicative uncertainties in the measurement for LPV filtering,” *International Journal of Systems Science*, vol. 47, no. 5, pp. 1042–1053, 2016.
- J5 C. F. Morais and M. F. Braga and **M. J. Lacerda** and R. C. L. F. Oliveira and P. L. D. Peres, “ \mathcal{H}_2 and \mathcal{H}_∞ filter design for polytopic continuous-time Markov jump linear systems with uncertain transition rates,” *International Journal of Adaptive Control and Signal Processing*, vol. 29, pp. 1207–1223, 2015.
- J4 L. Frezzatto and **M. J. Lacerda** and R. C. L. F. Oliveira and P. L. D. Peres, “Robust \mathcal{H}_2 and \mathcal{H}_∞ memory filter design for linear uncertain discrete-time delay systems,” *Signal Processing*, vol. 117, pp. 322–332, December 2015.
- J3 **M. J. Lacerda** and S. Tarbouriech and G. Garcia and P. L. D. Peres, “ \mathcal{H}_∞ filter design for nonlinear polynomial systems,” *Systems & Control Letters*, vol. 70, pp. 77–84, August 2014.
- J2 **M. J. Lacerda** and V. J. S. Leite and R. C. L. F. Oliveira and P. L. D. Peres, “Delay-dependent robust \mathcal{H}_∞ filter design for state-delayed discrete-time linear systems via homogeneous polynomial matrices,” *IET Control Theory & Applications*, vol. 7, no. 1, pp. 125–135, January 2013.
- J1 **M. J. Lacerda** and R. C. L. F. Oliveira and P. L. D. Peres, “Robust \mathcal{H}_2 and \mathcal{H}_∞ filter design for uncertain linear systems via LMIs and polynomial matrices,” *Signal Processing*, Vol. 81, No. 5, pp. 1115–1122, May 2011.

Conference Papers

- C19 P. M. Oliveira and P. S. P. Pessim and J. M. Palma and **M. J. Lacerda**, “Reference tracking control for cyber-physical systems under DoS attacks,” in *2021 IEEE CHILEAN Conference on Electrical, Electronics Engineering, Information and Communication Technologies (CHILECON), 2021*, Valparaiso, Chile, pp. 1–6.
- C18 **M. J. Lacerda** and C. M. Agulhari, “Stability Analysis of Discrete-Time LPV Switched Systems,” in *Proceedings of the 2020 IFAC World Congress*, Berlin, Germany, IFAC - PapersOnline, Volume 53, Issue 2, 2020, pp. 6145–6150.
- C17 G. F. Oliveira and V. J. S. Leite and **M. J. Lacerda**, “State-feedback control for continuous-time LPV systems with polynomial vector fields,” in *Proceedings of the 2020 IFAC World Congress*, Berlin, Germany, IFAC - PapersOnline, Volume 53, Issue 2, 2020, pp. 6299–6304.
- C16 L. S. Figueiredo and T. A. R. Parreiras and **M. J. Lacerda** and V. J. S. Leite, “Design of LPV-PI-Like Controller with Guaranteed Performance for Discrete-Time Systems under Saturating Actuators,” in *Proceedings of the 2020 IFAC World Congress*, Berlin, Germany, IFAC - PapersOnline, Volume 53, Issue 2, 2020, pp. 3898–3903.
- C15 P. S. P. Pessim and **M. J. Lacerda** and C. M. Agulhari, “Parameter-Dependent Lyapunov Functions for Robust Performance of Uncertain Systems,” *Proceedings of the 9th IFAC Symposium on Robust Control Design*, Florianópolis, SC, Brazil, September 2018, pp. 441–446.

- C14 T. S. Gomide and **M. J. Lacerda**. “Stability analysis of discrete-time switched systems under arbitrary switching,” *Proceedings of the 9th IFAC Symposium on Robust Control Design*, Florianópolis, SC, Brazil, September 2018, pp. 519–524.
- C13 C. M. Agulhari and **M. J. Lacerda**. “Robust performance for LPV periodic discrete-time systems,” *Proceedings of the 2018 American Control Conference*, Milwaukee, WI, USA, June 2018, pp. 2029–2034.
- C12 **M. J. Lacerda** and L. G. Crespo. “Interval predictor models for data with measurement uncertainty,” *Proceedings of the 2017 American Control Conference*, Seattle, WA, USA, May 2017, pp. 1487–1492.
- C11 **M. J. Lacerda** and P. Seiler. “LPV filter design for discrete-time systems with time-domain IQCs,” *Proceedings of the 2016 IEEE Conference on Computer Aided Control System Design (CACSD) Part of 2016 IEEE Multi-Conference on Systems and Control*, Buenos Aires, Argentina, September 2016, pp. 1042–1047.
- C10 C. M. Agulhari and **M. J. Lacerda**. “Robust periodic observer-based control for periodic discrete-time LTV systems,” *Proceedings of the 2016 American Control Conference*, Boston, MA, USA, July 2016, pp. 2942–2947.
- C9 **M. J. Lacerda**, G. Valmorbidia, and P. L. D. Peres. “Linear filter design for continuous-time polynomial systems with \mathcal{L}_2 -gain guaranteed bound,” in *Proceedings of the 54th IEEE Conference on Decision and Control*, Osaka, Japan, December 2015, pp. 5026–5030.
- C8 L. Frezzatto and **M. J. Lacerda** and R. C. L. F. Oliveira and P. L. D. Peres, “Robust \mathcal{H}_∞ memory filters for uncertain discrete-time linear systems,” in *Proceedings of the 2015 American Control Conference*, Chicago, IL, USA, July 2015, pp. 4004–4009.
- C7 C. F. Morais and M. F. Braga and **M. J. Lacerda** and R. C. L. F. Oliveira and P. L. D. Peres. “ \mathcal{H}_2 filter design through multi-simplex modeling for discrete-time Markov jump linear systems with partly unknown transition probability matrix,” in *Proceedings of the 53rd IEEE Conference on Decision and Control*, Los Angeles, CA, USA, December 2014, pp. 6585–6590.
- C6 —, “ \mathcal{H}_∞ filter design through multi-simplex modeling for discrete-time Markov jump linear systems with partly unknown transition probability matrix,” in *Proceedings of the 19th IFAC World Congress*, Cape Town, South Africa, August 2014, pp. 5049 – 5054.
- C5 **M. J. Lacerda** and S. Tarbouriech and G. Garcia and P. L. D. Peres, “ \mathcal{H}_∞ filter design for nonlinear quadratic systems,” in *Proceedings of the 9th IFAC Symposium on Nonlinear Control Systems (NOLCOS 2013)*, Toulouse, France, September 2013, pp. 634–639.
- C4 **M. J. Lacerda** and E. S. Tognetti and R. C. L. F. Oliveira and P. L. D. Peres, “ \mathcal{H}_∞ LPV filtering for discrete-time linear systems subject to additive and multiplicative uncertainties in the measurement,” in *Proceedings of the 2013 European Control Conference*, Zurich, Switzerland, July 2013, pp. 1823–1828.
- C3 **M. J. Lacerda** and R. C. L. F. Oliveira and P. L. D. Peres, “ \mathcal{H}_∞ parameter-dependent filter design for arbitrarily time-varying LPV systems,” in *Proceedings of the 18th IFAC World Congress*, Milano, Italy, September 2011, pp. 7927–7932.

- C2 **M. J. Lacerda** and V. J. S. Leite and R. C. L. F. Oliveira and P. L. D. Peres, “Robust \mathcal{H}_∞ filter design for polytopic discrete-time delay systems via LMIs and polynomial matrices,” in *Proceedings of the 50th IEEE Conference on Decision and Control — European Control Conference ECC 2011*, Orlando, FL, USA, December 2011, pp. 8225–8230.
- C1 **M. J. Lacerda** and R. C. L. F. Oliveira and P. L. D. Peres, “Robust \mathcal{H}_2 filter design for polytopic linear systems via LMIs and polynomial matrices,” in *Proceedings of the 49th IEEE Conference on Decision and Control*, Atlanta, GA, USA, December 2010, pp. 1466–1471.

Submitted papers

- S3 R. M. Fuentes and J. M. Palma and H. Guillard and **M. J. Lacerda** and L. P. Carvalho and A. J. Rojas and R. C. L. F. Oliveira. “A gain-scheduled control design applied to classical dc-dc converters in photovoltaic system and constant power loads.”
- S2 P. S. P. Pessim[†] and P. H. S. Coutinho and **M. J. Lacerda** and R. M. Palhares. “Distributed Control of Time-Delay Interconnected Nonlinear-TS Fuzzy Systems.”
- S1 P. M. Oliveira[†] and J. M. Palma and E. G. Nepomuceno **M. J. Lacerda**. “Reinforcement learning for control design of uncertain polytopic systems”

Citations

Citation metrics are from Google Scholar, with a total of 636 citations, h-index of 14, and i10-index of 19 as on September 13, 2022.

Google Scholar: <https://bit.ly/3cQMjwK>

ResearchGate: <https://bit.ly/3hdTS3V>

Awards, Funding and Scholarships

1. The fellowship of research productivity. *Analysis, filtering and control design for cyber-physical systems* (39,600.00 R\$), 2022 – 2024. The Brazilian National Council for Scientific and Technological Development - CNPq.
2. 2022 IEEE Senior Member.
3. 2020 Outstanding Reviewer Awards, IET Control Theory & Applications.
4. *Control and filtering for switched systems and for periodic systems by means of structured Lyapunov functions* (28,527.00 R\$), 2018 – 2022. The Brazilian National Council for Scientific and Technological Development - CNPq.
5. *Filter design and parameter estimation using semi-definite programming* (25,655.70 R\$), 2017 – 2021. Minas Gerais Research Foundation - FAPEMIG.
6. *Filter design for LPV systems using IQC*, Post-Doctorate, 08/2015 – 07/2016, São Paulo Research Foundation - FAPESP.
7. *Filtering of linear systems subject to Markov jumps and some class of nonlinear systems*, 06/2014 – 08/2016, Post-Doctorate, São Paulo Research Foundation - FAPESP.

8. EECI Graduate School on Control 2013, Stability and Control of Time-delay Systems, Gif-sur-Yvette (France), 03/2013, Travel Support (500 Euros).
9. *Filtering for dynamical systems subject to nonlinearities*, Doctorate, 10/2012 – 04/2013, São Paulo Research Foundation - FAPESP.
10. *Filter design for dynamic systems with time-varying parameters by means of polynomial Lyapunov functions*, Doctorate, 11/2010 – 05/2014, São Paulo Research Foundation - FAPESP.

Current Ph.D. students

1. Paulo Sérgio Pereira Pessim - 07/2021 - Distributed event-based control for large-scale linear systems with time-varying parameters subject to cyberattacks. (co-supervisor)

Current Master's students

1. José Fabiano Vellozo D'alterio Moreira - Analysis and control design for cyber-physical systems under replay attack.
2. Pedro Moreira de Oliveira - Machine learning techniques for control design of cyber-physical systems.

Master's students - Alumni

1. Paulo Sérgio Pereira Pessim - 05/2021 – Control design for cyber-physical LPV systems under DoS attacks: a packet-based approach.
2. Pedro Augusto da Silva Braga - 03/2021 – System Identification with PWARX model based on dynamic prediction error.
3. Gabriel Oliveira Ferreira - 12/2020 – State-feedback control for linear and state polynomial continuous-time LPV systems under constraints.
4. Larissa Soares Figueiredo - 03/2020 – Control of discrete-time LPV systems under saturated actuators.
5. Natalia Augusto Keles - 12/2019 – Robust analysis and observer based control for uncertain periodic discrete-time systems.
6. Thales da Silveira Gomide - 08/2019 - Stability analysis and control of discrete-time switched systems by means of structured Lyapunov functions.
7. Denise Fonseca Resende - 08/2018 - Sensitivity analysis of the integration step in compartmental and individual based models.

Current undergraduate students

1. João V. C. Pereira - 08/2021 – Stability analysis of switching systems with unstable modes.
2. Felipe Augusto Silva - 08/2021 – Finite time stabilization for cyber-physical systems under DoS attacks.

Undergraduate students - Alumni

1. Gabriel J. O. Cimino - 03/2021 – 02/2022 - State feedback control for cyber-physical systems subject to attacks.
2. Felipe A. Silva - 08/2020 – 07/2021 - Stability and state-feedback control for positive uncertain systems.
3. Raphael D. F. Gomes - 03/2020 – 02/2021 - State-feedback control for LPV systems under saturated actuators.
4. Hugo Sader Viana - 08/2019 – 07/2020 - Reinforcement learning techniques applied in robust control of discrete-time uncertain systems.
5. Stephanie Cristine Lopes - 08/2019 – 07/2020 - State feedback control for uncertain switched systems.
6. Raphael D. F. Gomes- 03/2019 – 02/2020 - Filter design for nonlinear polynomial systems.
7. Raphael D. F. Gomes- 08/2018 – 07/2019 - Interval Predictor Model for data with uncertainties in the measurement.
8. Yan T. Felber - 08/2018 – 07/2019 - Stability analysis of switched systems subject to polytopic uncertainties.
9. Paulo S. P. Pessim - 03/2018 – 02/2019 - Stability and state-feedback control for discrete-time linear systems with time-varying parameters.
10. Leandro T. S. Mello - 08/2017 – 07/2018 - Fault detection filter design for linear systems.
11. Paulo S. P. Pessim - 03/2017 – 02/2018 - Stability of uncertain systems using Lyapunov functions with higher order terms.
12. Bruna de Oliveira - 03/2017 – 02/2018 - Region of attraction estimation for non-linear systems with time-varying parameters.

Student awards and honors

1. The Federal University of São João del-Rei, **Honorable Mention**, Raphael D. F. Gomes, November 2021, Federal University of São João del-Rei.
2. The Brazilian National Council for Scientific and Technological Development, **Honorable Mention**, Paulo S. P. Pessim, October 2018, Federal University of São João del-Rei.

International Conferences and Events Attended

- *1st IFAC Virtual World Congress*, July 2020.
- *9th IFAC Symposium on Robust Control Design*, ROCOND, Florianópolis, SC, Brazil, September 2018.
- *2018 American Control Conference*, ACC 2018, Milwaukee, WI, June 2018.
- *2016 American Control Conference*, ACC 2016, Boston, MA, July 2016.

- *2016 IEEE Conference on Computer Aided Control System Design*, Buenos Aires, Argentina, September 2016.
- *IMA - Control Theory and its Applications*, Optimization and Parsimonious Modeling, Minneapolis, MN, USA, January 2016.
- *IMA - Control Theory and its Applications*, Distributed Control and Decision Making Over Networks, Minneapolis, MN, USA, September – October 2015.
- *53rd IEEE Conference on Decision and Control*, CDC 2014, Los Angeles, CA, USA, December 2014.
- *European Control Conference*, ECC 2013, Zurich, Switzerland, July 2013.
- *18th IFAC World Congress*, IFAC 2011, August 28–September 2, Milan, Italy, 2011.

Editorial Board

1. IEEE Latin America Transactions, 2020 – Present.
<https://latamt.ieee9.org/index.php/transactions/about/editorialTeam>
2. Mathematical Problems in Engineering, 2020 – Present.
<https://www.hindawi.com/journals/mpe/editors/>
3. Journal of the Franklin Institute, Special Issue on High Fidelity LPV systems under constraints.
<https://doi.org/10.1016/j.jfranklin.2022.02.029>
4. Approved as a member of the IEEE CSS Technology Conferences Editorial Board (TCEB). The term will begin on January 2023.

Journal Reviewing

Reviewer metrics are from Publons, with a total of 185 verified reviews as on August 09, 2022.

Publons: <https://www.webofscience.com/wos/author/rid/C-1970-2012>

Service

- Member of the Departmental Undergraduate Studies Committee in Electrical Engineering - Federal University of São João del-Rei. 06/2017 – 05/2019.
- Member of the board of evaluators of the Brazilian education ministry, trained and selected for the act of authorization of undergraduate courses

Languages

Portuguese, English, French (Professional working proficiency).

Teaching

In the last five years, I have taught the following courses:

Teaching Experience - Undergraduate courses

- **Linear Systems**, Electrical Engineering, Instructor. 1st semester 2018, 1st semester 2020, 2nd semester 2020, 1st semester 2021, 2nd semester 2021.
- **Classic Control**, Electrical Engineering, Instructor. 2nd semester 2016, 1st semester 2017, 1st semester 2018, 2nd semester 2018, 1st semester 2019.
- **Electric Circuits Laboratory**, Electrical Engineering, Instructor. 1st semester 2017, 2nd semester 2017, 2nd semester 2018.

Teaching Experience - Graduate courses

- **Robust Control** covers the use of Linear Matrix Inequalities in robust control, MSc in Electrical Engineering. Instructor. 1st semester 2018, 2nd semester 2019, 2nd semester 2020.
- **Linear Systems Theory and Design**, covers classical analysis of linear systems, MSc in Electrical Engineering. Instructor. 2nd semester 2017, 2nd semester 2018, 2nd semester 2021.
- **Positive Polynomials in Control**, covers polynomial techniques based on Linear Matrix Inequalities and Sum-of-Squares, MSc in Electrical Engineering. Instructor, developed curriculum. 1st semester 2019, 1st semester 2020.
- **Signals & Systems**, covers classical analysis of linear systems and signals, MSc in Electrical Engineering. Instructor. 2nd semester 2022.