

$$B_\varepsilon = \frac{dV(x, \theta, \xi)}{dt} + J(x, u, \dot{x}, \theta) = -\varepsilon x^T x,$$

$$\varepsilon \mapsto 0, \varepsilon \geq 0.$$

$$V(x, \theta, \xi) = x^T P(\theta, \xi) x,$$

# CURRICULUM VITAE

Nonlinear

## Personal details

**Name** Adrian Ilka (Ing., PhD.)  
**Address** Dirigentgatan 3, SE-421 37 Västra Frölunda, Göteborg, SE  
**E-mail(s)** [adrian.ilka@chalmers.se](mailto:adrian.ilka@chalmers.se), [ilka.adrian@gmail.com](mailto:ilka.adrian@gmail.com)  
**Web (Personal)** [www.adrianilka.eu](http://www.adrianilka.eu)



**Additional p.** [Chalmers](#); [Google Scholar](#); [LinkedIn](#), [ResearchGate](#)  
**Nationality** Hungarian **Publons ID:** [1301576](#)  
**Citizenship** Slovak Republic **ORCID ID:** [000-0002-7274-5832](#)  
**Date of birth** 28<sup>th</sup> October, 1987 **Scopus Author ID:** [55813192000](#)  
**Marital status** Married **ResearcherID:** [A-8295-2016](#)

## Teaching experience

### Chalmers University of Technology:

Bachelor projects: EENX15-18-19; EENX15-19-16; EENX15-18-89; EENX15-19-18; EENX15-19-19; EENX15-19-20; EENX15-19-82;

Master projects: Co-supervisor of 2 master projects.

### Slovak University of Technology in Bratislava:

2012-2013 (SS) Course teacher: [Advanced Control Theory](#),  
 Number of students: 20, Department: [IRC FEEIT](#).  
 Course teacher: [Modeling and Simulation Using Matlab](#),  
 Number of students: 60, Department: [IRC FEEIT](#).  
 2012-2013 (WS) Course teacher: [Algorithms and Programming](#),  
 Number of students: 23, Department: [ICSM FEEIT](#).  
 2013-2014 (SS) Course teacher: [Advanced Control Theory](#),  
 Number of students: 13, Department: [IRC FEEIT](#).  
 2013-2014 (WS) Course teacher: [Multivariable Systems](#),  
 Number of students: 12, Department: [IRC FEEIT](#).  
 MSc/BSc projects: 1 MSc project, 2 BSc project.

## Education

2012-2015 [Slovak University of technology in Bratislava](#), Faculty of Electrical Engineering and Information Technology, **Doctoral** degree program **Cybernetics**, PhD. in English (Rector's award)  
 2010-2012 [Slovak University of technology in Bratislava](#), Faculty of Electrical Engineering and Information Technology, **Master** degree program **Cybernetics**, Ing. (MSc.) in Slovak (graduated with honors + Dean's award)  
 2007-2010 [Slovak University of technology in Bratislava](#), Faculty of Electrical Engineering and Information Technology, **Bachelor** degree program **Industrial Informatics**, Bc. (BSc.) in Slovak  
 2003-2007 [Hungarian Secondary Vocational-technical School of Electrical Engineering](#) in Komárno. (graduated with honors + medal of merit, best student award)

## Additional education

|           |  |
|-----------|--|
| 2019      | Supervising Research Students, Chalmers University of Technology, Sweden                                   |
| 2011      | Mind Control and Nonviolent Communication Course (basic lecture series 101 through 404), Budapest, Hungary |
| 2004-2007 | CISCO Networking Academy – CCNA course, Bratislava, Slovakia   |
| 2007      | ECDL (full) course – European Computer Driving License, Nové Zámky, Slovakia                               |
| 2005      | Driving License with category A1, A, B1, B, AM. Komárno, Slovakia  |

## Work experience

|                 |  |
|-----------------|--|
| 2017-PL-present | <b>Researcher</b> at <a href="#">Chalmers University of Technology</a> , Department of Electrical Engineering, Gothenburg, Sweden, full-time.<br><b>Parental leave</b> from April 2018 – September 2018. |
| 2015-2017       | <b>Post-doctoral researcher</b> at <a href="#">Chalmers University of Technology</a> , Department of Signals and Systems, Gothenburg, Sweden, full-time.   |
| 2011            | <b>Control engineer</b> (electrical engineering) at <a href="#">Vodohospodárska Výstavba š.p.</a> (Water Economy Building Company – Government-Owned Corporation), 6 week full-time traineeship          |
| 2007-2010       | <b>Technician</b> (electrical engineering) at <a href="#">Slovenské Elektrárne a.s.</a> (Slovenské elektrárne an Enel Group Company), part-time.   |

## Technical skills

|                  |   |
|------------------|---|
| January 17, 2013 | Safety Technician Certificate – Art. 23 of Act. No. 124/2006 Call. On Occupational Safety and Health Protection and on the Amendment of Certain Acts (Authorized as the electrical engineer to control the functioning or operation of electrical equipment over 1000 V without limitation, including lighting conductors situated in class A and B premises) |
|------------------|---|

## Other skills

Keywords: C, Pascal, HTML 5, PHP, CSS, Java script, Java, MatLab, Octave, SciLab, LabView, MySQL, MS Office, Libre Office, LaTeX, Unix, Linux, Windows, Scribus, Gimp, Inkscape, AutoCad, ATMEL, Arduino, PLC (Siemens, Schneider, Allen Bradley).

## Language skills

|                 |                           |   |   |   |   |   |
|-----------------|---------------------------|---|---|---|---|---|
| Mother tongue   | <b>Hungarian</b>          | ● | ● | ● | ● | ● |
| First language  | <b>Slovak</b> (advanced)  | ● | ● | ● | ● | ○ |
| Second language | <b>English</b> (advanced) | ● | ● | ● | ● | ○ |
| Third language  | Swedish (basic)           | ● | ● | ○ | ○ | ○ |

## Interests

Swimming, hiking, reading, play the piano, play the guitar, singing, scouting.

## Publications (since 2013)

### Original research papers in international scientific journals – peer-reviewed

- [1]\* VESELÝ, Vojtech – ILKA, Adrian. Generalized robust gain-scheduled PID controller design for affine LPV systems with polytopic uncertainty. *Systems and Control letters*, 2017, vol. 105, p. 6-13.  
DOI: [10.1016/j.sysconle.2017.04.005](https://doi.org/10.1016/j.sysconle.2017.04.005)
- [2] ILKA, Adrian – VESELÝ, Vojtech. Robust Switched Control of Nonlinear Continuous-Time Systems. Accepted to *International Review of Automatic Control (I.RE.A.CO)*, 2017, vol. 10, no. 3, p. 118-125.  
DOI: [10.15866/ireaco.v10i3.13479](https://doi.org/10.15866/ireaco.v10i3.13479)
- [3]\* VESELÝ, Vojtech – ILKA, Adrian. Novel Approach to Switched Controller Design for Linear Continuous-Time Systems. *Asian Journal of Control*, 2016, vol. 18, no. 4, p. 1365-1375.  
DOI: [10.1002/asjc.1240](https://doi.org/10.1002/asjc.1240)
- [4] VESELÝ, Vojtech – ILKA, Adrian. Robust Controller Design with Hard Input Constraints. Time Domain Approach. *International Journal of Innovative Computing, Information and Control*, 2016, vol. 12, no. 1, p. 161-170.  
Link: <http://www.ijicic.org/ijicic-15-08063.pdf>
- [5] VESELÝ, Vojtech – ILKA, Adrian. Output Feedback Control of Switched Nonlinear Systems: A Gain Scheduling Approach. *Journal of Electrical Engineering*, 2016, vol. 67, no. 2, p. 87-94.  
DOI: [10.1515/jee-2016-0013](https://doi.org/10.1515/jee-2016-0013)
- [6] ILKA, Adrian – VESELÝ, Vojtech. Robust Switched Controller Design for Linear Continuous-Time Systems. *Archives of Control Sciences*, 2015, vol. 25, no. 4, p. 401-416.  
DOI: [10.1515/acsc-2015-0026](https://doi.org/10.1515/acsc-2015-0026)
- [7] ILKA, Adrian – VESELÝ, Vojtech. Unified Robust Gain-Scheduled and Switched Controller Design for Linear Continuous-Time Systems. *International Review of Automatic Control (I.RE.A.CO)*, 2015, vol 8, no. 3, p. 251-259.  
DOI: [10.15866/ireaco.v8i3.6277](https://doi.org/10.15866/ireaco.v8i3.6277)
- [8] ILKA, Adrian – OTTINGER, Ivan – LUDWIG, Tomáš – TÁRNÍK, Marian – VESELÝ, Vojtech – MIKLOVIČOVÁ, Eva – MURGAŠ, Ján. Robust Controller Design for T1DM Individualized Model: Gain Scheduling Approach. *International Review of Automatic Control (I.RE.A.CO)*, 2015, vol. 8, no. 2, p. 155-162.  
DOI: [10.15866/ireaco.v8i2.5554](https://doi.org/10.15866/ireaco.v8i2.5554)
- [9]\* VESELÝ, Vojtech – ILKA, Adrian. Design of Robust Gain-Scheduled PI Controllers. *Journal of the Franklin Institute*, 2015, vol. 352, no. 1, p. 1476-1494.  
DOI: [10.1016/j.jfranklin.2015.01.009](https://doi.org/10.1016/j.jfranklin.2015.01.009)
- [10] VESELÝ, Vojtech – ILKA, Adrian. Robust Gain-Scheduled PID Controller Design for Uncertain LPV Systems. *Journal of Electrical Engineering*, 2015, vol. 66, no. 1, p. 1-7.  
DOI: [10.1515/jee-2015-0003](https://doi.org/10.1515/jee-2015-0003)
- [11] ILKA, Adrian – VESELÝ, Vojtech. Gain-Scheduled Controller Design: Variable Weighting Approach. *Journal of Electrical Engineering*, 2014, vol. 65, no. 2, p. 116-120.  
DOI: [10.2478/jee-2014-0017](https://doi.org/10.2478/jee-2014-0017)
- [12] ILKA, Adrian – VESELÝ, Vojtech. Robust Gain-Scheduled Controller Design for Uncertain LPV systems: Affine Quadratic Stability Approach. *Journal of Electrical Systems and Information Technology*, 2014, vol. 1, no. 1, p. 45-57.  
DOI: [10.1016/j.jesit.2014.03.004](https://doi.org/10.1016/j.jesit.2014.03.004)

- [13]\* VESELÝ, Vojtech – ILKA, Adrian. Gain-Scheduled PID Controller Design. *Journal of Process Control*, 2013, vol. 23, p. 1141-1148.  
DOI: [10.1016/j.jprocont.2013.07.002](https://doi.org/10.1016/j.jprocont.2013.07.002)

**Published contributions on scientific conferences or symposiums – peer-reviewed**

- [14]\* ILKA, Adrian – MURGOVSKI, Nikolce – SJÖBERG, Jonas. An iterative Newton's method for output-feedback LQR design for large-scale systems with guaranteed convergence. 17<sup>th</sup> European Control Conference, Naples, Italy, 25-28 June 2019. ([Accepted](#))
- [15] ILKA, Adrian – MURGOVSKI, Nikolce – FREDRIKSSON, Jonas – SJÖBERG, Jonas. Air-management and fueling strategy for diesel engines from multi-layer control perspective. 9th IFAC International Symposium on Advances in Automotive Control, Orléans, France, 24-27 June 2019. ([Accepted](#))
- [16] ILKA, Adrian. Matlab/Octave toolbox for structurable output-feedback LQR design. 3<sup>rd</sup> IFAC Conference on Advances in Proportional-Integral-Derivative Control, Ghent, Belgium, May 9-11, 2018, p. 598-603.  
DOI: [10.1016/j.ifacol.2018.06.161](https://doi.org/10.1016/j.ifacol.2018.06.161)
- [17] ILKA, Adrian – VESELÝ, Vojtech. Robust Guaranteed Cost Output-Feedback Gain-Scheduled Controller Design. 20<sup>th</sup> IFAC World Congress 2017, Toulouse, France, July 9-14, 2017, p. 11853-11858.  
DOI: [10.1016/j.ifacol.2017.08.1694](https://doi.org/10.1016/j.ifacol.2017.08.1694)
- [18] ILKA, Viktória – ILKA, Adrian. An overview about legal regulation of autonomous vehicles: technical and legal challenges. 21<sup>th</sup> International Conference on Process Control (PC). Štrbské Pleso, Slovakia, June 6 – 9, 2017, p. 428-433.  
DOI: [10.1109/PC.2017.7976252](https://doi.org/10.1109/PC.2017.7976252)
- [19] ILKA, Adrian – VESELÝ, Vojtech. Robust LPV-based infinite horizon LQR design. 21<sup>th</sup> International Conference on Process Control (PC). Štrbské Pleso, Slovakia, June 6 – 9, 2017, p. 86-91.  
DOI: [10.1109/PC.2017.7976188](https://doi.org/10.1109/PC.2017.7976188)
- [20] ILKA, Adrian – MCKELVEY, Tomas. Robust discrete-time gain-scheduled guaranteed cost PID controller design. 21<sup>th</sup> International Conference on Process Control (PC). Štrbské Pleso, Slovakia, June 6 – 9, 2017, p. 54-59.  
DOI: [10.1109/PC.2017.7976194](https://doi.org/10.1109/PC.2017.7976194)
- [21] ILKA, Adrian – VESELÝ, Vojtech – MCKELVEY, Tomas. Robust Gain-Scheduled PSD Controller Design from Educational Perspective. 11<sup>th</sup> IFAC Symposium on Advances in Control Education, Bratislava, Slovakia, June 1-3, 2016, p. 354-359.  
DOI: [10.1016/j.ifacol.2016.07.203](https://doi.org/10.1016/j.ifacol.2016.07.203)
- [22] ILKOVÁ, Viktória – ILKA, Adrian. Legal Cybernetics: An Educational Perspective. 11<sup>th</sup> IFAC Symposium on Advances in Control Education, Bratislava, Slovakia, June 1-3, 2016, p. 326-331.  
DOI: [10.1016/j.ifacol.2016.07.198](https://doi.org/10.1016/j.ifacol.2016.07.198)
- [23] VESELÝ, Vojtech – ILKA, Adrian. Robust Controller Design with Input Constraints, Time Domain Approach. 8<sup>th</sup> IFAC Symposium on Robust Control Design, Bratislava, Slovakia, July 15-17, 2015. p. 197-202.  
DOI: [10.1016/j.ifacol.2015.09.457](https://doi.org/10.1016/j.ifacol.2015.09.457)
- [24] ILKA, Adrian – LUDWIG, Tomáš – OTTINGER, Ivan – TÁRNÍK, Marian – MIKLOVIČOVÁ, Eva – VESELÝ, Vojtech – MURGAŠ, Ján. Robust Gain-Scheduled Controller Design for T1DM Individualised Model. 8th IFAC Symposium on Robust Control Design, Bratislava, Slovakia, July 15-17, 2015, p. 81-86.  
DOI: [10.1016/j.ifacol.2015.09.438](https://doi.org/10.1016/j.ifacol.2015.09.438)

- [25] VESELÝ, Vojtech – ILKA, Adrian. Robust Switched Controller Design for Nonlinear Continuous Systems. 1<sup>st</sup> IFAC Conference on Modeling, Identification and Control of Nonlinear Systems, Saint Petersburg, Russia, June 24-26, 2015, p. 1079-1084.  
DOI: [10.1016/j.ifacol.2015.09.335](https://doi.org/10.1016/j.ifacol.2015.09.335)
- [26] ILKA, Adrian – VESELÝ, Vojtech. Gain-Scheduled MPC Design for Nonlinear Systems with Input Constraints. Preprints of the 1st IFAC Conference on Modeling, Identification and Control of Nonlinear Systems – MICNON, Saint Petersburg, Russia, June 24-26, 2015, p. 922-927.  
DOI: [10.1016/j.ifacol.2015.09.307](https://doi.org/10.1016/j.ifacol.2015.09.307)
- [27] ILKA, Adrian – VESELÝ, Vojtech. Robust Discrete Gain-Scheduled Controller Design for Uncertain LPV Systems. 20th International Conference on Process Control (PC), Štrbské pleso, Slovak Republic, June 9-12, 2015, p. 302-307.  
DOI: [10.1109/PC.2015.7169980](https://doi.org/10.1109/PC.2015.7169980)
- [28] ILKA, Adrian – VESELÝ, Vojtech. Observer-Based Output Feedback Gain-Scheduled Controller Design. 20<sup>th</sup> International Conference on Process Control (PC), Štrbské pleso, Slovak Republic, June 9-12, 2015, p. 13-18.  
DOI: [10.1109/PC.2015.7169731](https://doi.org/10.1109/PC.2015.7169731)
- [29] ILKA, Adrian – VESELÝ, Vojtech. Gain-scheduled model predictive controller design. 17<sup>th</sup> Conference of Doctoral Students ELITECH'15, Bratislava, Slovak Republic, May 25, 2015. ISBN 978-80-227-4358-7.
- [30] ILKA, Adrian – VESELÝ, Vojtech. Robust discrete gain-scheduled controller design: LMI approach. 16<sup>th</sup> Conference of Doctoral Students ELITECH'14; Bratislava, Slovakia, 4 June 2014, ISBN 978-80-227-4171-2.
- [31] ILKA, Adrian – VESELÝ, Vojtech. Decentralized gain-scheduled PSS design on the base of experimental dates. 11<sup>th</sup> International Scientific Conference on Control of Power Systems 2014; Tatranské Matliare, Slovakia; 20-22 May 2014, p. 15-20. ISBN 978-80-89402-72-4.
- [32] VESELÝ, Vojtech – ILKA, Adrian. Switched system controller design: Quadratic stability approach. International Conference on Cybernetics and Informatics SSKI 2014; Oščadnica, Slovakia, 5.-8. 2. 2014, ISBN 978-80-227-4122-4.
- [33] ILKA, Adrian – VESELÝ, Vojtech. Robust Gain-Scheduled Controller Design for Uncertain LPV Systems: Quadratic Stability Approach. International Conference on Cybernetics and Informatics SSKI 2014. Oščadnica, Slovakia, 5.-8. 2. 2014, ISBN 978-80-227-4122-4.
- [34] ILKA, Adrian – ERNEK, Martin. Modeling and Control System of Wind Power Plants with Pumped Storage Hydro Power Plant. Renewable Energy Sources 2013: 4<sup>th</sup> International Scientific Conference OZE 2013. Tatranské Matliare, Slovakia, May 21-23, 2013, p. 495-500. ISBN 978-80-89402-64-9.
- [35] ILKA, Adrian – VESELÝ, Vojtech. Gain-Scheduled Controller Design: Variable Weighting Approach. Bratislava. 15<sup>th</sup> Conference of Doctoral Students ELITECH'13. Bratislava, Slovakia, 5 June 2013, p. 1-6. ISBN 978-80-227-3947-4.
- [36] VESELÝ, Vojtech – ILKA, Adrian – KOZÁKOVÁ, Alena. Frequency Domain Gain Scheduled Controller Design for SISO Systems. 19<sup>th</sup> International Conference on Process Control. Štrbské Pleso, Slovakia, June 18-21, 2013, p. 439-444.  
DOI: [10.1109/PC.2013.6581450](https://doi.org/10.1109/PC.2013.6581450)
- [37] VESELÝ, Vojtech – ILKA, Adrian. Gain-Scheduled Controller Design: Guaranteed Quality Approach. 19<sup>th</sup> International Conference on Process Control 2013. Štrbské Pleso, Slovakia, June 18-21, 2013, p. 456-461.  
DOI: [10.1109/PC.2013.6581453](https://doi.org/10.1109/PC.2013.6581453)

- [38] VESELÝ, Vojtech – ILKA, Adrian. PID robust gain-scheduled controller design. 13<sup>th</sup> European Control Conference 2014, June 24-27, 2014, Strasbourg, France, p. 2756-2761.  
DOI: [10.1109/ECC.2014.6862205](https://doi.org/10.1109/ECC.2014.6862205)
- [39] ILKA, Adrian – VESELÝ, Vojtech. Discrete gain-scheduled controller design: Variable weighting approach. 15<sup>th</sup> International Carpathian Control Conference ICC 2014. Velké Karlovice, Czech Republic, May 28-30, 2014, p. 186-191.  
DOI: [10.1109/CarpathianCC.2014.6843594](https://doi.org/10.1109/CarpathianCC.2014.6843594)
- [40] VESELÝ, Vojtech – ILKA, Adrian. Gain-Scheduled Controller design: MIMO Systems. 14<sup>th</sup> International Carpathian Control Conference ICC 2013. Rytro, Poland, May 26-29, 2013, p. 417-422.  
DOI: [10.1109/CarpathianCC.2013.6560580](https://doi.org/10.1109/CarpathianCC.2013.6560580)
- [41] ILKA, Adrian – VESELÝ, Vojtech. Discrete Gain-Scheduled Controller Design: Guaranteed Cost and Affine Quadratic Stability Approach. International Conference on Innovative Technologies IN-TECH 2013, Budapest, Hungary 10.-13.09.2013, p. 157-160. ISBN 978-953-6326-88-4.
- [42] VESELÝ, Vojtech – ROSINOVÁ, Danica – ILKA, Adrian. Decentralized Gain-Scheduling Controller Design: Polytopic System Approach. 13<sup>th</sup> IFAC Symposium on Large Scale Complex Systems Theory and Applications. Shanghai, China, July 7-10, 2013, p. 401-406.  
DOI: [10.3182/20130708-3-CN-2036.00064](https://doi.org/10.3182/20130708-3-CN-2036.00064)
- [43] VOZÁK, Daniel – ILKA, Adrian. Application of Unstable System in Education of Modern Control Methods. 10<sup>th</sup> IFAC Symposium on Advances in Control Education. Sheffield, UK, August 28-30, 2013, p. 114-119.  
DOI: [10.3182/20130828-3-UK-2039.00030](https://doi.org/10.3182/20130828-3-UK-2039.00030)
- [44] HOLIČ, Ivan – ILKA, Adrian. Robust State Feedback Controller Design for DC-Motor System. 10<sup>th</sup> IFAC Symposium on Advances in Control Education. Sheffield, UK, August 28-30, 2013, p. 120-125.  
DOI: [10.3182/20130828-3-UK-2039.00031](https://doi.org/10.3182/20130828-3-UK-2039.00031)

**Published contributions on scientific conferences or symposiums – non peer-reviewed**

- [45] ILKA, Adrian – MCKELVEY, Tomas. Robust Discrete-Time Gain-Scheduled PSD Controller Design. Reglermöte 2016, Göteborg, Sweden, 8-9 Jun, 2016, p. 271-275.
- [46] ILKA, Adrian – VESELÝ, Vojtech. Robust Gain-Scheduled PID Controller Design with Guaranteed Cost. Reglermöte 2016, Göteborg, Sweden, 8-9 Jun, 2016, p. 329-334.

**Original research papers submitted to international scientific journals – peer-reviewed**

- [47] VESELÝ, Vojtech – ILKA, Adrian – KÓRÖSI, Ladislav – ERNEK, Martin. Master-slave  $H_\infty$  robust controller design for synchronization of chaotic systems. Submitted to *Modeling, Identification and Control*, submitted on 11. December, 2018.

**Original research papers to be submitted to international scientific journals – peer-reviewed**

- [48]\* ILKA, Adrian – ILKA Viktória. A Slice of Legal Cybernetics: LPV Modelling and Control of Speeding Fines. To be submitted to *IEEE Transactions on Cybernetics*. ([Preprint](#))
- [49] ILKA, Adrian – MURGOVSKI, Nikolce. A novel approach to adjustable LQR-based robust PID controller design. To be submitted to *Trasnactions of the Institute of Measurement and Control*.
- [50] ILKA, Adrian – VELMURUGAN, V. Dhinesh – MCKELVEY, Tomas. LPV modeling and control of diesel exhaust after-treatment system. To be submitted to journal.

- [51] ILKA, Adrian – MURGOVSKI, Nikolce. Generalized robust output-feedback LQR design. To be submitted to journal.
- [52] KULCSAR, Balazs – ILKA, Adrian. Analytical LPV-LQR solution. To be submitted to journal.
- [53] ILKA, Adrian – MURGOVSKI, Nikolce – FREDRIKSSON, Jonas – SJÖBERG, Jonas. Optimal off-line air-management and fueling strategy for diesel engines from multi-layer control perspective. To be submitted to journal.
- [54] ILKA Adrian – MURGOVSKY Nikolce – FREDRIKSSON Jonas. Novel model-based offline optimal control of diesel engine air path system. To be submitted to journal.
- [55] ILKA, Adrian – MURGOVSKI, Nikolce. Fuel-optimal intelligent cruise control for heavyduty vehicles. To be submitted to journal.
- [56] VESELÝ, Vojtech – TÁRNÍK, Marián – ILKA, Adrian. Robust output-feedback LQR-based PID controller design with pole-placement. To be submitted to journal.

### Other publications

- [57] ILKA, Adrian. Modeling and Control of Wind Turbine. BSc thesis, Slovak University of Technology in Bratislava 2010, 86 p., in Slovak.
- [58] ILKA, Adrian. Modeling and Control System of Wind Power Plants with Pumped Storage Hydro Power Plant, MSc thesis, Slovak University of Technology in Bratislava, 2012, 128 p., in Slovak.
- [59] ILKA, Adrian. Gain-Scheduled Controller Design. PhD thesis, Slovak University of Technology in Bratislava 2015, 184 p.
- [60] ILKA, Adrian – ERNEK, Martin. Modeling and Control of Wind Turbine using MatLab/SimPowerSystems. Proceedings of the ŠVOČ 2011, Bratislava, Slovakia, 4.5.2011, p. 355-361, ISBN 978-80-227-3508-7.

**Most relevant publications:** [1], [3], [9], [13], [14], [48].

**Most up-to-date publications:** [14], [15], [16], [17].

### Presentations

[16], [17], [18], [19], [20], [21], [23], [24], [26], [27], [28], [29], [30], [31], [33], [34], [35], [36], [37], [38], [39], [40], [41], [43], [44], [45], [46].

### Recent presentations:

[3<sup>rd</sup> IFAC Conference on Advances in Proportional-Integral-Derivative Control 2018](#)

[20<sup>th</sup> IFAC World Congress 2017](#)

[21<sup>th</sup> International Conference on Process Control \(PC\) 2017](#)

### Peer review activity (last 2 years)

- IEEE Transactions on Cybernetics (1)
- International Journal of Robust and Nonlinear Control (2)
- Journal of the Franklin Institute (2)
- Transactions of the Institute of Measurement and Control (4)
- Journal of Electrical Engineering (1)
- etc.

For more information please see my [Publons](#) or [ORCID](#) profile.

## Projects

- 2017 – Present [\*\*MULTI-level Control for Robust integrated vehicle Energy management\*\*](#)  
(Swedish Energy Agency, P43322-1)  
Role: researcher,  
Publications: [14, 15, 16, 17, 47, 48-56]
- 2017 – Present [\*\*IMPERIUM\*\*](#)  
(H2020 GV-06-2015)  
Role: researcher,  
Publications: [14, 15, 16, 17, 47, 48-56]
- 2015 – Present [\*\*Multivariable Methods for energy efficient Engine Control \(MultiMEC\)\*\*](#)  
(Vinnova, FFI, grant num. 2014-06249)  
Role: researcher,  
Publications: [1, 2, 3, 18, 19, 20, 21, 22, 45, 46]
- 2015 – 2018 [\*\*VCloud II\*\*](#)  
(Vinnova, FFI, grant num. 2014-06251)  
Role: Researcher  
Publications: [1, 2, 3, 18, 19, 20, 21, 22, 45, 46]
- 2015 – 2017 [\*\*Interdisciplinary post-doc Cluster for Future Hybrid Vehicle\*\*](#)  
(Chalmers Area of Advance Transportation)  
Role: researcher,  
Publications: [1, 2, 3, 4, 5, 6, 18, 19, 20, 21, 22, 45, 46]
- 2016 – 2017 [\*\*Control of dynamic systems under the conditions of uncertainty\*\*](#)  
(Slovak Scientific Grant Agency VEGA, Grant No. 1/0475/16)  
Role: researcher,  
Publications: [3, 4, 17, 19, 21, 47]
- 2014 – 2015 [\*\*Research center for severe diseases and related complications\*\*](#)  
(ITMS: 26240120038)  
Role: researcher,  
Publications: [8, 24]
- 2012 – 2015 [\*\*Advanced Methods of Robust and Optimal Control\*\*](#)  
(Slovak Scientific Grant Agency VEGA, Grant No. 1/1241/12)  
Role: researcher,  
Publications: [7, 8, 9, 10, 11, 12, 13, 23-44]

## Honors and Awards

- 3<sup>th</sup> September, 2015 Award of the Rector for excellence in postgraduate study at Slovak University of Technology, Faculty of Electrical Engineering and Information Technology
- 25<sup>th</sup> May, 2015 Best student paper award: 17<sup>th</sup> Conference of Doctoral Students ELITECH'15
- 22<sup>th</sup> May, 2014 Award for the best student paper on the conference. 11<sup>th</sup> International Scientific Conference on Control of Power Systems 2014



|                             |   |
|-----------------------------|---|
| 5 <sup>th</sup> July, 2013  | Best student paper award: 15 <sup>th</sup> Conference of Doctoral Students ELITECH'13   |
| 11 <sup>th</sup> July, 2012 | Award with a laudatory letter from the dean for excellent master thesis.  |
| 12 <sup>th</sup> July, 2012 | Award of the Dean for excellence in graduate study at Slovak University of Technology, Faculty of Electrical Engineering and Information Technology |
| 4 <sup>th</sup> May, 2011   | IEEE Award for victory in the competition ŠVOČ 2011   |
| 6 <sup>th</sup> June, 2007  | Best student award with medal of merit for excellence in study at the Secondary Vocational-technical School of Electrical Engineering in Komárno    |

## References

- 1) My former supervisor during my PhD study at Slovak University of Technology in Bratislava:  
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- 2) My former supervisor during my post-doc position at Chalmers University of Technology:  
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 E-mail: [tomas.mckelvey@chalmers.se](mailto:tomas.mckelvey@chalmers.se)  
 web: <http://www.chalmers.se/en/Staff/Pages/tomas-mc-kelvey.aspx>
- 3) My colleague/mentor at Chalmers University of Technology:  
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 web: <https://www.chalmers.se/en/staff/Pages/nikolce-murgovski.aspx>
- 4) My colleague at Chalmers University of Technology:  
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 Tel.: +46 31 772 17 85  
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 web: <https://www.chalmers.se/en/staff/Pages/balazs-adam-kulcsar.aspx>

## Appendix A

### Journal Impact Factors

#### International Review of Automatic Control:

(Publications: 2015 - [6], [7], | 2017 - [12])

- Journal metrics for 2015 [Scopus:](#) CiteScore: 0.42, SJR: 0.655, SNIP: 0.785
- Journal metrics for 2016 [Scopus:](#) CiteScore: 0.71, SJR: 0.510, SNIP: 0.409

#### International Journal of Innovative Computing, Information and Control:

(Publication: 2016 - [10])

- Journal metrics for 2016 [Scopus:](#) CiteScore: 1.27, SJR: 0.778, SNIP: 0.739

#### Archives of Control Sciences:

(Publication: 2015 - [8])

- Journal metrics for 2016 [JCR:](#) Impact factor: **0.705**, 5-year impact factor: -  
[Scopus:](#) CiteScore: 0.93, SJR: 0.317, SNIP: 0.488

#### Journal of Electrical Engineering:

(Publications: 2014 - [3] | 2015 - [4] | 2016 - [9])

- Journal metrics for 2014 [JCR:](#) Impact factor: **0.420**, 5-year impact factor: 0.539  
[Scopus:](#) CiteScore: 0.47, SJR: 0.221, SNIP: 0.510
- Journal metrics for 2015 [JCR:](#) Impact factor: **0.407**, 5-year impact factor: 0.498  
[Scopus:](#) CiteScore: 0.69, SJR: 0.231, SNIP: 0.505
- Journal metrics for 2016 [JCR:](#) Impact factor: **0.483**, 5-year impact factor: 0.524  
[Scopus:](#) CiteScore: 0.69, SJR: 0.231, SNIP: 0.505

#### Asian Journal of Control:

(Publication: 2016 - [11])

- Journal metrics for 2015 [JCR:](#) Impact factor: **1.407**, 5-year impact factor: 1.397  
[Scopus:](#) CiteScore: 3.11, SJR: 2.323, SNIP: 1.842

#### Systems & Control Letters:

(Publication: 2017 - [13])

- Journal metrics for 2016 [JCR:](#) Impact factor: **2.550**, 5-year impact factor: 2.897  
[Scopus:](#) CiteScore: 3.64, SJR: 2.711, SNIP: 2.087

#### Journal of Process Control:

(Publication: 2013 - [1])

- Journal metrics for 2013 [JCR:](#) Impact factor: **2.179**, 5-year impact factor: 2.555  
[Scopus:](#) CiteScore: 3.93, SJR: 1.399, SNIP: 2.627

#### Journal of the Franklin Institute:

(Publication: 2015 - [5])

- Journal metrics for 2015 [JCR:](#) Impact factor: **2.327**, 5-year impact factor: 2.395  
[Scopus:](#) CiteScore: 3.19, SJR: 1.037, SNIP: 1.633

#### IEEE Transactions on Cybernetics:

(Publication: submitted in 2017 - [41])

- Journal metrics for 2016 [JCR:](#) Impact factor: **7.384**, 5-year impact factor: 7.678  
[Scopus:](#) CiteScore: 6.92, SJR: 2.906, SNIP: 2.827

## Appendix B

### Bachelor of Science (BSc), Industrial Informatics

|   |              |
|---|--------------|
| <a href="#">Actuators</a>                                 | FEI:33118_3B |
| <a href="#">Algorithms and Programming</a>                | FEI:32002_3B |
| <a href="#">Bases of Real-Time Systems</a>                | FEI:33148_3B |
| <a href="#">Calculus 1</a>                                | FEI:34709_3B |
| <a href="#">Calculus 2</a>                                | FEI:34703_3B |
| <a href="#">Calculus 3</a>                                | FEI:31715_3B |
| <a href="#">Computer Architecture</a>                     | FEI:31902_3B |
| <a href="#">Continuous Processes</a>                      | FEI:33125_3B |
| <a href="#">Control Systems Software 1</a>                | FEI:30116_3B |
| <a href="#">Control Systems Software 2</a>                | FEI:33117_3B |
| <a href="#">Control Theory 1</a>                          | FEI:30115_3B |
| <a href="#">Control Theory 2</a>                          | FEI:30126_3B |
| <a href="#">Economics</a>                                 | FEI:33501_3B |
| <a href="#">Electronic Systems</a>                        | FEI:32115_3B |
| <a href="#">Electrotechnology</a>                         | FEI:32508_3B |
| <a href="#">English Language 1</a>                        | FEI:33303_3B |
| <a href="#">English Language 2</a>                        | FEI:33304_3B |
| <a href="#">Entrepreneurial Management</a>                | FEI:33550_3B |
| <a href="#">Industrial Communication Systems</a>          | FEI:33140_3B |
| <a href="#">Instrumentation of Process Control System</a> | FEI:30117_3B |
| <a href="#">Introduction into Engineering</a>             | FEI:30112_3B |
| <a href="#">Logic Systems</a>                             | FEI:34710_3B |
| <a href="#">Measuring Information Systems</a>             | FEI:31912_3B |
| <a href="#">Methodology of Measurement</a>                | FEI:34932_3B |
| <a href="#">Modeling and Simulation</a>                   | FEI:30124_3B |
| <a href="#">Nonlinear Systems</a>                         | FEI:33171_3B |
| <a href="#">Optimization</a>                              | FEI:33150_3B |
| <a href="#">Physics 1</a>                                 | FEI:34504_3B |
| <a href="#">Physics 2</a>                                 | FEI:31517_3B |
| <a href="#">Robotics</a>                                  | FEI:33143_3B |
| <a href="#">Safety and Protection of Health at Work 1</a> | FEI:31401_3B |
| <a href="#">Safety and Protection of Health at Work 2</a> | FEI:31412_3B |
| <a href="#">Small Business Entrepreneurship</a>           | FEI:30138_3B |

### Master of Science (MSc), Cybernetics

|  |              |
|--|--------------|
| <a href="#">Adaptive Control</a>                         | FEI:37128_3I |
| <a href="#">Advanced Control Theory 1</a>                | FEI:37125_3I |
| <a href="#">Control of Complex Systems</a>               | FEI:37181_3I |
| <a href="#">Event Systems</a>                            | FEI:37150_3I |
| <a href="#">Functional Analysis 1</a>                    | FEI:31796_3I |
| <a href="#">Linear System Control</a>                    | FEI:37187_3I |
| <a href="#">Modelling and Power System Control</a>       | FEI:31361_3I |
| <a href="#">Multivariable Systems</a>                    | FEI:37129_3I |
| <a href="#">Network Technologies</a>                     | FEI:38181_3I |
| <a href="#">Optimal Control</a>                          | FEI:37157_3I |
| <a href="#">Physics of Processes</a>                     | FEI:34563_3I |
| <a href="#">Production Systems Modelling and Control</a> | FEI:37153_3I |
| <a href="#">Systems Identification</a>                   | FEI:37180_3I |

### Doctor of Philosophy (PhD), Cybernetics

|  |              |
|--|--------------|
| <a href="#">Cybernetics Specialization</a>       | FEI:37108_3D |
| <a href="#">English for Special Purposes</a>     | FEI:33301_3D |
| <a href="#">Mathematics and Natural Sciences</a> | FEI:37115_3D |
| <a href="#">Theory of Cybernetics</a>            | FEI:37107_3D |