

# NIKOLAOS BEKIARIS-LIBERIS

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- ADDRESS Department of Production Engineering & Management  
Dynamic Systems & Simulation Laboratory (DSSL)  
Technical University of Crete, Chania 73100, Greece  
E-mail: nikos.bekiaris@dssl.tuc.gr  
Web: <http://users.isc.tuc.gr/nlimperis/>
- POSITIONS
1. **Technical University of Crete, Greece**  
**Marie Sklodowska-Curie Fellow**, Department of **Production Engineering and Management**, May 2017–current.
  2. **Technical University of Crete, Greece**  
**Adjunct Professor**, Department of **Electrical & Computer Engineering**, September 2015–May 2017.
  3. **Technical University of Crete, Greece**  
**Postdoctoral Researcher** in the Department of **Production Engineering and Management**, December 2014–May 2017  
Advisor: Markos Papageorgiou.
  4. **University of California Berkeley, USA**  
**Postdoctoral Researcher** in the Departments of **Electrical Engineering & Computer Sciences** and **Civil & Environmental Engineering**, August 2013–November 2014  
Advisor: Alexandre Bayen.
- EDUCATION
1. **University of California San Diego, USA**  
**PhD in Mechanical & Aerospace Engineering**, June 2013  
Advisor: Miroslav Krstic.
  2. **University of California San Diego, USA**  
**MS in Mechanical & Aerospace Engineering**, February 2010 (GPA: 4.0/4.0)
  3. **National Technical University of Athens, Greece**  
**Diploma in Electrical and Computer Engineering**, November 2007
- RESEARCH INTERESTS
- Control Theory (Nonlinear Control, Delay Systems, PDE Control, Adaptive Control, Hybrid Systems, Stochastic Control)
  - Applications (Traffic and Crowd Flow Systems, Extruders/3D-Printing, Oil Drilling and Production, Automotive Engines and Catalysts, Cooling & Energy Systems, Rolling Mills)
- PUBLICATIONS H-index: 16. Citations: 1112 (as of: 09/11/2017, source: Google Scholar)  
H-index: 12. Citations: 712 (as of: 09/11/2017, source: Scopus)

## Books

1. **N. Bekiaris-Liberis** and M. Krstic, “Nonlinear Control Under Nonconstant Delays”, SIAM, 2013. [link](#)

## Book Chapters

1. **N. Bekiaris-Liberis**, M. Jankovic and M. Krstic, “Backstepping Designs in the Presence of Non-constant Delays on the Virtual Input”, in I. Karafyllis, M. Malisoff, F. Mazenc, and P. Pepe (Eds), *Recent Results on Nonlinear Time Delayed Systems*, Advances in Dynamics and Delays Series, Springer, 2015. [link](#)
2. **N. Bekiaris-Liberis** and M. Krstic, “Control of Nonlinear Systems With Delays”, in T. Samad and J. Baillieul, *Encyclopedia of Systems and Control*, Springer, 2014. [link](#)

## Journals

35. I. Karafyllis, **N. Bekiaris-Liberis**, and M. Papageorgiou, “Analysis and control of a non-standard hyperbolic PDE traffic flow model,” *Mathematical Control and Related Fields* (impact factor: 0.54), under review, 2017.
34. S. Papadopoulou, C. Roncoli, **N. Bekiaris-Liberis**, I. Papamichail, and M. Papageorgiou, “Microscopic simulation-based validation of a per-lane traffic state estimation scheme for highways with connected vehicles,” *Transportation Research Part C* (impact factor: 3.1), under review, 2017.
33. **N. Bekiaris-Liberis** and M. Krstic, “Compensation of transport actuator dynamics with input-dependent moving controlled boundary,” *IEEE Transactions on Automatic Control* (impact factor: 2.78), under review, 2017.
32. **N. Bekiaris-Liberis** and M. Krstic, “Compensation of actuator dynamics governed by quasilinear hyperbolic PDEs,” *Automatica* (impact factor: 3.64), provisionally accepted, 2017.
31. **N. Bekiaris-Liberis**, C. Roncoli, and M. Papageorgiou, “Highway traffic state estimation per lane in the presence of connected vehicles,” *Transportation Research Part B* (impact factor: 3.77), to appear, 2017.
30. **N. Bekiaris-Liberis**, C. Roncoli, and M. Papageorgiou, “Predictor-based adaptive cruise control design,” *IEEE Transactions on Intelligent Transportation Systems* (impact factor: 2.53), to appear, 2016.
29. X. Cai, **N. Bekiaris-Liberis**, and M. Krstic, “Input-to-state stability and inverse optimality of linear time-varying-delay predictor feedbacks,” *IEEE Transactions on Automatic Control* (impact factor: 2.78), to appear, 2018. [link](#)
28. M. Diagne, **N. Bekiaris-Liberis**, and M. Krstic, “Compensation of input delay that depends on delayed input,” *Automatica* (impact factor: 3.64), vol. 85, pp. 362–373, 2017.
27. M. Diagne, **N. Bekiaris-Liberis**, A. Otto, and M. Krstic, “Control of transport PDE/nonlinear ODE cascades with state-dependent propagation speed,” *IEEE Transactions on Automatic Control* (impact factor: 2.78), to appear, 2017. [link](#)

26. C. Roncoli, **N. Bekiaris-Liberis**, and M. Papageorgiou, "Lane-changing feedback control for efficient lane assignment at motorway bottlenecks," *Transportation Research Record* (impact factor: 0.54), vol. 2625, pp. 20–31, 2017.
25. M. Fountoulakis, **N. Bekiaris-Liberis**, C. Roncoli, I. Papamichail, and M. Papageorgiou, "Highway traffic state estimation with mixed connected and conventional vehicles: Microscopic simulation-based testing," *Transportation Research Part C: Emerging Technologies* (impact factor: 3.1), vol. 78, pp. 13–33, 2017. [link](#)
24. M. Diagne, **N. Bekiaris-Liberis**, and M. Krstic, "Time- and state-dependent input delay-compensated bang-bang control of a screw extruder for 3D printing," *International Journal of Robust and Nonlinear Control* (impact factor: 2.53), to appear, 2017. [link](#)
23. M. Jin, **N. Bekiaris-Liberis**, K. Weekly, C. Spanos, and A. M. Bayen, "Occupancy detection via environmental sensing," *IEEE Transactions on Automation Science and Engineering* (impact factor: 2.7), to appear, 2016. [link](#)
22. C. Roncoli, **N. Bekiaris-Liberis**, and M. Papageorgiou, "Use of speed measurements for highway traffic state estimation: Case studies on NGSIM data and highway A20, Netherlands," *Transportation Research Record* (impact factor: 0.54), vol. 2559, pp. 90–100, 2016.
21. **N. Bekiaris-Liberis**, C. Roncoli, and M. Papageorgiou, "Highway traffic state estimation with mixed connected and conventional vehicles," *IEEE Transactions on Intelligent Transportation Systems* (impact factor: 2.53), vol. 17, pp. 3484–3497, 2016. [link](#)
20. **N. Bekiaris-Liberis** and M. Krstic, "Predictor-feedback stabilization of multi-input nonlinear systems," *IEEE Transactions on Automatic Control* (impact factor: 2.78), to appear, 2016. [link](#)
19. **N. Bekiaris-Liberis** and M. Krstic, "Stability of predictor-based feedback for nonlinear systems with distributed input delay," *Automatica* (impact factor: 3.64), vol. 70, pp. 195–203, 2016. [link](#)
18. P.-O. Lamare and **N. Bekiaris-Liberis**, "Control of  $2 \times 2$  linear hyperbolic systems: Backstepping-based trajectory generation and PI-based tracking," *Systems and Control Letters* (impact factor: 1.91), vol. 86, pp. 24–33, 2015. [link](#)
17. K. Weekly, **N. Bekiaris-Liberis**, M. Jin, and A. Bayen "Modeling and estimation of the humans' effect on the CO<sub>2</sub> dynamics inside a conference room", *IEEE Transactions on Control Systems Technology* (impact factor: 2.82), vol. 23, pp. 1770–1781, 2015. [link](#)
16. **N. Bekiaris-Liberis**, A. Bayen "Nonlinear stabilization of a viscous Hamilton-Jacobi PDE", *IEEE Transactions on Automatic Control* (impact factor: 2.78), vol. 60, pp. 1698–1703, 2014. [link](#)
15. **N. Bekiaris-Liberis**, "Simultaneous compensation of input and state delays for nonlinear systems", *Systems and Control Letters* (impact factor: 1.91), vol. 73, pp. 96–102, 2014. [link](#)

14. **N. Bekiaris-Liberis** and M. Krstic, “Compensation of wave actuator dynamics for nonlinear systems”, *IEEE Transactions on Automatic Control* (impact factor: 2.78), vol. 59, pp. 1555–1570, 2014. [link](#)
13. M. Krstic and **N. Bekiaris-Liberis**, “Nonlinear stabilization in infinite dimension”, *Annual Reviews in Control* (impact factor: 2.04), vol. 37, pp. 220–231, 2013. [link](#)
12. **N. Bekiaris-Liberis** and M. Krstic, “Nonlinear control under delays that depend on delayed states”, *European Journal of Control* (impact factor: 1.34), vol. 19, pp. 389–398, 2013. [link](#)
11. **N. Bekiaris-Liberis** and M. Krstic, “Robustness of nonlinear predictor feedback laws to time- and state-dependent delay perturbations”, *Automatica* (impact factor: 3.64), vol. 49, pp. 1576–1590, 2013. [link](#)
10. **N. Bekiaris-Liberis**, M. Jankovic and M. Krstic, “Adaptive stabilization of LTI systems with distributed input delay”, *International Journal of Adaptive Control and Signal Processing* (impact factor: 1.37), vol. 27, pp. 47–65, 2013. [link](#)
9. **N. Bekiaris-Liberis** and M. Krstic, “Compensation of state-dependent input delay for nonlinear systems”, *IEEE Transactions on Automatic Control* (impact factor: 2.78), vol. 58, pp. 275–289, 2013. [link](#)
8. **N. Bekiaris-Liberis**, M. Jankovic and M. Krstic, “Compensation of state-dependent state delay for nonlinear systems”, *Systems and Control Letters* (impact factor: 1.91), vol. 61, pp. 849–856, 2012. [link](#)
7. **N. Bekiaris-Liberis** and M. Krstic, “Compensation of time-varying input and state delays for nonlinear systems”, *Journal of Dynamic Systems, Measurement, and Control* (impact factor: 1.12), vol. 134, paper 011009, 2012. [link](#)
6. **N. Bekiaris-Liberis** and M. Krstic, “Lyapunov stability of linear predictor feedback for distributed input delays”, *IEEE Transactions on Automatic Control* (impact factor: 2.78), vol. 56, pp. 655–660, 2011. [link](#)
5. **N. Bekiaris-Liberis** and M. Krstic, “Compensating the distributed effect of diffusion and counter-convection in multi-input and multi-output LTI systems”, *IEEE Transactions on Automatic Control* (impact factor: 2.78), vol. 56, pp. 637–642, 2011. [link](#)
4. M. Krstic and **N. Bekiaris-Liberis**, “Compensation of infinite-dimensional input dynamics”, *Annual Reviews in Control* (impact factor: 1.34), vol. 34, pp. 233–244, 2010. [link](#)
3. **N. Bekiaris-Liberis** and M. Krstic, “Compensating the distributed effect of a wave PDE in the actuation or sensing path of MIMO LTI systems”, *Systems and Control Letters* (impact factor: 1.91), vol. 59, pp. 713–719, 2010. [link](#)
2. **N. Bekiaris-Liberis** and M. Krstic, “Stabilization of linear strict-feedback systems with delayed integrators”, *Automatica* (impact factor: 3.64), vol. 56, pp. 1902–1910, 2010. [link](#)

1. **N. Bekiaris-Liberis** and M. Krstic, “Delay-adaptive feedback for linear feed-forward systems”, *Systems and Control Letters* (impact factor: 1.91), vol. 59, pp. 277–283, 2010. [link](#)

## Conferences

47. I. Karafyllis, **N. Bekiaris-Liberis**, and M. Papageorgiou, “Traffic flow inspired analysis and boundary control for a class of  $2 \times 2$  hyperbolic systems,” *European Control Conference*, submitted, 2017.
46. **N. Bekiaris-Liberis** and M. Krstic, “Control of nonlinear systems with actuator dynamics governed by quasilinear first-order hyperbolic PDEs,” *European Control Conference*, submitted, 2017.
45. **N. Bekiaris-Liberis** and M. Krstic, “Compensation of transport actuator dynamics with input-dependent moving controlled boundary,” *European Control Conference*, submitted, 2017.
44. **N. Bekiaris-Liberis**, C. Roncoli, and M. Papageorgiou, “Predictor-based adaptive cruise control design with integral action,” *IFAC Symposium on Control in Transportation Systems*, submitted, 2017.
43. S. Papadopoulou, C. Roncoli, **N. Bekiaris-Liberis**, I. Papamichail, and M. Papageorgiou, “Validation of a per lane traffic state estimation scheme for highways with connected vehicles,” *IEEE Conference on Intelligent Transportation Systems*, 2017.
42. **N. Bekiaris-Liberis**, C. Roncoli, and M. Papageorgiou, “Structural observability of multi-lane traffic with connected vehicles,” *IEEE Conference on Intelligent Transportation Systems*, 2017.
41. **N. Bekiaris-Liberis**, C. Roncoli, and M. Papageorgiou, “Traffic state estimation per lane in highways with connected vehicles,” *2017 EWGT Meeting*, 2017.
40. M. Diagne, **N. Bekiaris-Liberis**, and M. Krstic, “Compensation of input delay that depends on delayed input,” *American Control Conference*, 2017.
39. C. Roncoli, **N. Bekiaris-Liberis**, and M. Papageorgiou, “Lane-changing feedback control for efficient lane assignment at motorway bottlenecks,” *Transportation Research Board Annual Meeting*, 2017.
38. M. Fountoulakis, **N. Bekiaris-Liberis**, C. Roncoli, I. Papamichail, and M. Papageorgiou, “Highway traffic state estimation with mixed connected and conventional vehicles: Microscopic simulation-based testing,” *IEEE Conference on Intelligent Transportation Systems*, 2016.
37. C. Roncoli, **N. Bekiaris-Liberis**, and M. Papageorgiou, “Optimal lane-changing control at motorway bottlenecks,” *IEEE Conference on Intelligent Transportation Systems*, 2016.
36. **N. Bekiaris-Liberis**, C. Roncoli, and M. Papageorgiou, “Predictor-based adaptive cruise control design,” *IEEE Multi-Conference on Systems and Control*, 2016.

35. M. Diagne, **N. Bekiaris-Liberis**, A. Otto, and M. Krstic, "Control of transport PDE/nonlinear ODE cascades with state-dependent propagation speed," IEEE Conference on Decision and Control, 2016.
34. **N. Bekiaris-Liberis**, C. Roncoli, and M. Papageorgiou, "Highway traffic state estimation with mixed connected and conventional vehicles," IFAC Symposium on Control in Transportation Systems, 2016.
33. **N. Bekiaris-Liberis** and M. Krstic, "Stability of predictor-based feedback for nonlinear systems with distributed input delay," American Control Conference, 2016.
32. C. Roncoli, **N. Bekiaris-Liberis**, and M. Papageorgiou, "Highway traffic state estimation using speed measurements: Case studies on NGSIM data and highway A20 in the Netherlands," Transportation Research Board, 2015.
31. **N. Bekiaris-Liberis**, C. Roncoli, and M. Papageorgiou, "Highway traffic state estimation with mixed connected and conventional vehicles using speed measurements," IEEE Conference on Intelligent Transportation Systems, 2015.
30. M. Diagne, **N. Bekiaris-Liberis**, and M. Krstic, "Time- and state-dependent input delay-compensated bang-bang-control of a screw extruder for 3D printing," ASME Dynamic Systems and Control Conference, 2015.
29. **N. Bekiaris-Liberis** and M. Krstic, "Predictor-feedback stabilization of multi-input nonlinear systems," IEEE Conference on Decision and Control, 2015.
28. M. Jin, **N. Bekiaris-Liberis**, K. Weekly, C. Spanos, and A. M. Bayen, "Sensing by proxy: Occupancy detection based on indoor CO<sub>2</sub> concentration," International Conference on Mobile Ubiquitous Computing, Systems, Services, and Technologies, 2015.
27. P.-O. Lamare and **N. Bekiaris-Liberis**, and A. Bayen, "Control of  $2 \times 2$  linear hyperbolic systems: Backstepping-based trajectory generation and PI-based tracking," European Control Conference, 2015.
26. F. Mazenc, S.-I. Niculescu, **N. Bekiaris-Liberis**, "Asymptotic stabilization of linear time-varying systems with input delays via delayed static output feedback," American Control Conference, 2015.
25. K. Weekly, **N. Bekiaris-Liberis**, A. Bayen "Modeling and estimation of the humans' effect on the CO<sub>2</sub> dynamics inside a conference room", IEEE Conference on Decision and Control, 2014.
24. **N. Bekiaris-Liberis**, A. Bayen "Nonlinear stabilization of a viscous Hamilton-Jacobi PDE", IEEE Conference on Decision and Control, 2014.
23. **N. Bekiaris-Liberis**, "Simultaneous compensation of input and state delays for nonlinear systems", European Control Conference, 2014.
22. M. Krstic, **N. Bekiaris-Liberis** and R. Vazquez, "PDE control designs inspired by problems in off-shore drilling and oil production", *Plenary Paper*, 1st IFAC Workshop on Control of Systems Governed by Partial Differential Equations, 2013.

21. **N. Bekiaris-Liberis** and M. Krstic, “Nonlinear control under input delays that depend on delayed states”, IEEE Conference on Decision and Control, 2013.
20. **N. Bekiaris-Liberis** and M. Krstic, “Oil drilling inspired compensation of wave actuator dynamics for nonlinear systems”, IEEE Conference on Decision and Control, 2013.
19. M. Krstic and **N. Bekiaris-Liberis**, “Nonlinear Stabilization in Infinite Dimension”, *Plenary Paper*, 9th IFAC Symposium on Nonlinear Control Systems, 2013.
18. **N. Bekiaris-Liberis** and M. Krstic, “Stabilization in the supremum norm of wave PDE/nonlinear ODE cascades”, Mediterranean Conference on Control and Automation, 2013.
17. **N. Bekiaris-Liberis** and M. Krstic, “Robustness to time- and state-dependent delay perturbations in networked nonlinear control systems”, American Control Conference, 2013.
16. M. Krstic and **N. Bekiaris-Liberis**, “Control of nonlinear delay systems: A Tutorial”, IEEE Conference on Decision and Control, 2012.
15. **N. Bekiaris-Liberis**, M. Jankovic and M. Krstic, “PDE-based analysis and control of the oxygen storage level in three-way catalytic converters”, IEEE Conference on Decision and Control, 2012.
14. **N. Bekiaris-Liberis**, M. Jankovic and M. Krstic, “Adaptive stabilization of LTI systems with distributed input delay”, IEEE Conference on Decision and Control, 2012.
13. **N. Bekiaris-Liberis**, M. Jankovic and M. Krstic, “Compensation of state-dependent state delay for nonlinear systems”, American Control Conference, 2012.
12. **N. Bekiaris-Liberis** and M. Krstic, “Compensation of state-dependent delays under local stabilizability assumption”, American Control Conference, 2012.
11. **N. Bekiaris-Liberis** and M. Krstic, “Compensation of state-dependent input delay for nonlinear systems”, IEEE Conference on Decision and Control, 2011.
10. **N. Bekiaris-Liberis** and M. Krstic, “Stabilization of nonlinear strict-feedback systems with time-varying delayed integrators”, ASME Dynamic Systems and Control Conference , 2011.
9. **N. Bekiaris-Liberis** and M. Krstic, “Compensation of time-varying input delay for nonlinear systems ”, Mediterranean Conference on Control and Automation, Corfu, Greece, 2011.
8. **N. Bekiaris-Liberis** and M. Krstic, “Lyapunov stability of linear predictor feedback for distributed input delays”, IEEE Conference on Decision and Control, 2010.
7. **N. Bekiaris-Liberis** and M. Krstic, “Compensating the distributed effect of counter-convection and diffusion in multi-input and multi-output LTI systems”, IEEE Conference on Decision and Control, 2010.

6. **N. Bekiaris-Liberis** and M. Krstic, “Compensating the distributed effect of a wave PDE in the actuation or sensing path of multi-input and multi-output LTI systems”, 2010 ASME Dynamic Systems and Control Conference.
5. **N. Bekiaris-Liberis** and M. Krstic, “Delay-adaptive feedback for linear feed-forward systems”, American Control Conference , Baltimore, USA, 2010.
4. **N. Bekiaris-Liberis** and M. Krstic, “Stabilization of linear strict-feedback systems with delayed integrators”, American Control Conference , Baltimore, USA, 2010.
3. A. Pyrkin, A. Smyshlyaev, **N. Bekiaris-Liberis** and M. Krstic, “Rejection of sinusoidal disturbance of unknown frequency for linear systems with input delay”, American Control Conference , Baltimore, USA, 2010.
2. A. Pyrkin, A. Smyshlyaev, **N. Bekiaris-Liberis** and M. Krstic, “Output control algorithm for unstable plant with input delay and cancellation of unknown biased harmonic disturbance”, IFAC Workshop on Time Delay Systems ,Prague, Czech, 2010.
1. **N. Bekiaris Liberis** and M. Krstic, “On stabilizing strict-feedback linear systems with delayed integrators,” Mediterranean Conference on Control and Automation, Thessaloniki, Greece, June 2009.

#### RECOGNITIONS

1. **Marie Sklodowska-Curie Individual Fellowship Grant** (about 13.5% of the submitted proposals was funded in the 2016 Reintegration scheme), European Commission, 2017.
2. **Best Paper Award**, International Conference on Mobile Ubiquitous Computing, Systems, Services and Technologies (UBICOMM), 2015.
3. **Chancellor’s Dissertation Medal** in Engineering (Best Dissertation Award in Engineering among 150 PhDs granted in 2013), Jacobs School of Engineering, University of California, San Diego, 2014.
4. **Finalist for Best Student Paper Award**, IEEE Conference on Decision and Control, 2013.
5. **Outstanding Graduate Student Award**, Department of Mechanical and Aerospace Engineering, University of California, San Diego, 2012.
6. **Finalist for Best Student Paper Award**, ASME Dynamic Systems and Control Conference, 2010.
7. **Jacobs School of Engineering Fellow**, University of California, San Diego, 2008.
8. **Accepted to be a member of MENSA** (organization for people that belong in the upper 2% of the world’s population based on their IQ), Greek Chapter, 2004.



MAJOR  
LECTURES

1. **IEEE Conference on Decision and Control 2012**, *Tutorial Lecture*, Hawaii, December 2012.
2. **European Embedded Control Institute**, *Tutorial Lecture within the Graduate School in Control*, Belgrade, March 2013.
3. **Ioannou Fest**, Larnaca, June 2013.

INVITED  
TALKS

1. Department of Applied Mathematics & Physical Sciences, **National Technical University of Athens, Greece**, November 2017.
2. Department of Engineering Sciences, **University of Oxford, Oxford**, October 2017.
3. Department of Computer Sciences, **University of Zaragoza, Zaragoza**, July 2017.
4. Department of Electrical and Computer Engineering, **Technical University of Crete, Chania**, June 2017.
5. Department of Production Engineering and Management, **Technical University of Crete, Chania**, June 2014.
6. Department of Electrical and Electronic Engineering, **Imperial College, London**, June 2014.
7. Automatic Control Laboratory, **ETH, Zurich**, May 2014.
8. Department of Electrical and Computer Engineering, **University of Illinois, Urbana-Champaign, Champaign**, February 2014.
9. Department of Mechanical Engineering, **Delft University of Technology, Delft**, December 2013.
10. Department of Mechanical Engineering, **University of Puerto, Mayaguez**, October 2013.
11. Department of Chemical Engineering, **MIT, Cambridge**, May 2013.
12. Department of Mechanical Engineering, **MIT, Cambridge**, May 2013.
13. Department of Mechanical and Materials Engineering, **FIU, Miami**, May 2013.
14. Faculty of Mathematics and Natural Sciences, **University of Groningen, Groningen**, April 2013.
15. Department of Mechanical Engineering, **University of Texas, Dallas**, April 2013.
16. Department of Electrical Engineering and Computer Science, **Northwestern University**, April 2013.
17. Department of Electrical and Computer Engineering, **NYU Poly**, March 2013.
18. Department of Aerospace Engineering, **University of Michigan, Ann Arbor**, March 2013.
19. School of Electrical Engineering and Computer Science, **University of Newcastle, Australia**, March 2013.

20. Department of Mechanical Engineering, **Stanford University, Stanford**,  
February 2013.

INDUSTRY  
EXPERIENCE

**Intern**

**Ford Research and Advanced Engineering,** **July, 2012 - September, 2012**  
**Ford Motor Company, USA**  
PDE-Based Control of the Oxygen Storage Level in Three-Way Catalytic Converters: Further Results and Experimental Validation.  
Supervisor: Dr. Mrdjan Jankovic.

**Intern**

**Ford Research and Advanced Engineering,** **July, 2011 - September, 2011**  
**Ford Motor Company, USA**  
PDE-Based Control of the Oxygen Storage Level in Three-Way Catalytic Converters.  
Supervisor: Dr. Mrdjan Jankovic.

1. **Instructor**

**Technical University of Crete** **September 2017 - Current**  
SYS 401 (“Linear Systems”). Department of Electrical & Computer Engineering.

2. **Instructor**

**Technical University of Crete** **January 2017 - September 2017**  
SYS 402 (“Control Theory With Applications”). Department of Electrical & Computer Engineering.

3. **Instructor**

**Technical University of Crete** **September 2016 - January 2017**  
SYS 401 (“Linear Systems”). Department of Electrical & Computer Engineering.

4. **Instructor**

**Technical University of Crete** **January 2016 - September 2016**  
SYS 402 (“Control Theory With Applications”). Department of Electrical & Computer Engineering.

5. **Instructor**

**Technical University of Crete** **September 2015 - January 2016**  
SYS 401 (“Linear Systems”). Department of Electrical & Computer Engineering.

6. **Co-Instructor**

**University of California, Berkeley, USA** **January 2014 - May 2014**  
CE 291F, ME 236, EE 291 (“Control and Optimization of Distributed Parameters Systems”). Departments of Civil & Environmental Engineering and Electrical Engineering & Computer Sciences.  
Instructor: Prof. Alexandre Bayen.

7. **Teaching Assistant**

**University of California, San Diego, USA** **September 2011 - December 2011**  
MAE 287 (“Control of Distributed Parameters Systems”). Department of Mechanical and Aerospace Engineering.  
Instructor: Prof. Miroslav Krstic.

8. **Teaching Assistant**

**University of California, San Diego, USA** **July 2009 - December 2009**

MAE 143A (“Signals and Systems”). Department of Mechanical and Aerospace Engineering.

Instructor: Prof. Miroslav Krstic.

9. **Teaching Assistant**

**National Technical University of Athens,  
Greece**

**September 2006 - January 2007**

“Linear Control”. Department of Electrical and Computer Engineering.

Instructor: Prof. Paraskevas Paraskevopoulos.

10. **Teaching Assistant**

**Agricultural University of Athens, Greece**

**February 2006 - June 2006**

“Sensor and Measurement Devices”. Department of Natural Resources Management and Agricultural Engineering.

Instructor: Prof. Kostas Arvanitis.

STUDENT  
SUPERVISION

1. Konstantinos Skyvalakis, Undergraduate, Technical University of Crete, Greece.  
Topic: “Predictor-feedback control of traffic flow at distant bottlenecks.”
2. Alexandros Tzananakis, Undergraduate, Technical University of Crete, Greece.  
Topic: “Energy efficient control of bipedal robot locomotion in dynamic environments.”  
**Currently:** MS student, Imperial College London, England.
3. Sofia Papadopoulou, MS, Technical University of Crete, Greece.  
Topic: “Microsimulation-based testing of multi-lane traffic estimation methodologies.” **(Led so far to 1 journal and 1 conference papers.)**
4. Antonis Georgantas, Undergraduate, Technical University of Crete, Greece.  
Topic: “Traffic flow optimization via lane-changing control.”  
**Currently:** MS student, Technical University of Crete, Greece.
5. Iris Philopoulou, Undergraduate, Technical University of Crete, Greece.  
Topic: “Real-data testing of multi-lane traffic estimation methodologies.”  
**Currently:** MS student, National Technical University of Athens, Greece.
6. Markos Fountoulakis, MS, Technical University of Crete, Greece.  
“Microscopic simulation-based testing of highway traffic state estimation algorithms in the presence of connected/automated vehicles”. **(Led so far to 1 journal and 1 conference papers.)**
7. Mamadou Diagne, Postdoctoral, University of California, San Diego, USA.  
“Predictor feedback control of extruders”. **(Led so far to 3 journal and 3 conference papers.)**  
**Currently:** Assistant Professor, Rensselaer Polytechnic Institute, USA.
8. Pierre-Olivier Lamare, Graduate, CNRS, Grenoble, France.  
“Control of  $2 \times 2$  hyperbolic systems with application to the Aw-Rascle traffic model”. **(Led so far to 1 journal and 1 conference papers.)**  
**Currently:** Postdoctoral Researcher, Inria Sophia Antipolis, France.
9. Kevin Weekly, Graduate, University of California, Berkeley, USA.  
“PDE-Based modeling and estimation of human occupancy in smart buildings”. **(Led so far to 2 journal and 2 conference papers.)**  
**Currently:** Research Scientist, Fitbit, USA.

10. Ming Jin, Graduate, University of California, Berkeley, USA.  
 “Data-driven PDE model-based occupancy detection using indoor CO2 concentration”. **(Led so far to 2 journal and 1 conference papers.)**  
**Currently:** PhD candidate, University of California, Berkeley, USA.
11. Mandy Huo, Undergraduate, University of California, Berkeley, USA.  
 Topic: “Frequency domain representation of hyperbolic systems.”  
**Currently:** Graduate student, University of California, Berkeley, USA.
12. Anton Pyrkin, Graduate, ITMO University, Saint Petersburg, Russia.  
 “Disturbance rejection for input delay systems”. **(2 conference papers.)**  
**Currently:** Associate Professor and Dean of Faculty of Control Systems and Industrial Robotics, ITMO University, Saint Petersburg, Russia.

EDITORSHIP

1. **Guest Editor** for the International Journal of Adaptive Control and Signal Processing, special issue: Robust Adaptive Control: Legacies and Horizons.
2. **Guest Editor** for the Transportation Research Part C, special issue: Management of Future Traffic Systems.

GRANTS  
AWARDED

1. **PI:** “Partial Differential Equation Model-Based Control of Traffic Flow,” *HORIZON2020, Marie Skłodowska-Curie Action, Individual Fellowship*, 2017–2019.
2. **Participated as member of TUC’s team:** “Road Infrastructure Ready for Mixed Vehicle Traffic Flows,” *HORIZON2020, Research and Innovation Action, Automated Road Transport*, 2017–2020.

GRANTS  
PREPARATION

1. **Participated as member of TUC’s team:** “Synergetic Emergent Behavior in Cyber-Physical Systems of Systems,” *HORIZON2020, Research and Innovation Action, Information and Communication Technologies*, 2016.

CONFERENCE  
ORGANIZATION

1. **Main Organizer** for the 1st Symposium on Management of Future Traffic Systems. [link](#)

PROFESSIONAL  
ACTIVITIES

1. Book and Paper Reviewing.  
**Book Series:** Springer Briefs Series in Control, Automation, and Robotics. Birkhauser.  
**Journals:** IEEE Transactions on Automatic Control. Automatica. Systems and Control Letters. IEEE Transactions on Control Systems Technology. European Journal on Control. International Journal of Adaptive Control and Signal Processing. International Journal of Robust and Nonlinear Control. IMA Journal on Mathematical Control and Information. Signal Processing. Journal of the Franklin Institute. Transportation Research Part C.  
**Conferences:** IEEE Conference on Decision and Control 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017. American Control Conference 2010, 2011, 2012, 2014, 2015, 2016, 2017. European Control Conference 2014, 2015, 2016. IFAC NOLCOS 2014. IFAC World Congress 2017. IEEE Multi-Conference on Systems and Control 2016. IEEE Conference on Intelligent Transportation Systems 2016.

2. Member of IEEE Control Systems Society since December 2008
3. IEEE member since December 2008
4. ASME member since Septemeber 2010

PROGRAMMING● Matlab, Simulink

#### REFERENCES

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