

# CURRICULUM VITAE

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## PERSONAL DATA

Name: Bernd Kolar (Dipl.-Ing. Dr.techn.)  
Date of birth: 02.03.1988  
Place of birth: A-4020 Linz  
Citizenship: Austria



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## EDUCATION

04/2013-02/2017 PhD in Technical Sciences. Supervisor: o.Univ.-Prof. Dipl.-Ing. Dr.techn. Kurt Schlacher, Institute of Automatic Control and Control Systems Technology, Johannes Kepler University Linz  
10/2010-03/2013 Master in Mechatronics at the Johannes Kepler University Linz, specialization in Automatic Control and Robotics, finished with distinction  
10/2007-09/2010 Bachelor in Mechatronics at the Johannes Kepler University Linz, finished with distinction  
07/2006-01/2007 Military Service  
09/1998-06/2006 Grammar School Bundesrealgymnasium Traun  
09/1994-07/1998 Elementary School in Kremsdorf, Ansfelden

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## EMPLOYMENT

since 05/2017 Research Assistant (FWF) at the Institute of Automatic Control and Control Systems Technology, Johannes Kepler University Linz  
04/2013-04/2017 University Assistant at the Institute of Automatic Control and Control Systems Technology, Johannes Kepler University Linz

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## TEACHING

### JKU-LINZ

Exercises: Automatisierungstechnik 1 Übungen (Automatic Control 1), 2014, 2016  
Automatisierungstechnik 2 Übungen (Automatic Control 2), 2013-2016

Regelung nichtlinearer mechatronischer Systeme 2 Übungen (Nonlinear Control of Mechatronic Systems 2), 2013

Practicals: Automatisierungstechnik Praktikum (Practical Training in Automatic Control), 2014-2016  
Prozessautomatisierung 2 Praktikum (Control System Technology 2), 2014

## PUBLICATIONS

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### JOURNAL ARTICLES

1. B. Kolar, H. Rams, K. Schlacher, Time-optimal flatness based control of a gantry crane, *Control Engineering Practice*, 60, pp. 18-28, 2017.
  2. B. Kolar, M. Schöberl, K. Schlacher, Some Remarks concerning Flatness and the Parameterization of the System Variables by a Flat Output, *Proceedings in Applied Mathematics and Mechanics (PAMM)*, 16(1), pp. 811-812, 2016.
  3. B. Kolar, M. Schöberl, K. Schlacher, Eine Normalform für eine spezielle Klasse flacher nichtlinearer zeitdiskreter Mehrgrößensysteme, *at - Automatisierungstechnik*, 64(8), pp. 586-601, 2016.
  4. B. Kolar, K. Schlacher, Flache konzentriertparametrische Systeme, Theorie und Praxis, *e&Ei Elektrotechnik und Informationstechnik*, 132(4), pp. 214-220, 2015.
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### BOOKS

1. Contributions to the Differential Geometric Analysis and Control of Flat Systems, in Modellierung und Regelung komplexer dynamischer Systeme: Shaker Verlag, Aachen, 2017, ISBN 978-3-8440-5162-9.
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### CONFERENCE PROCEEDINGS

1. B. Kolar, A. Kaldmäe, M. Schöberl, Ü. Kotta, K. Schlacher, Construction of Flat Outputs of Nonlinear Discrete-Time Systems in a Geometric and an Algebraic Framework, *Proceedings 10th IFAC Symposium on Nonlinear Control Systems (NOLCOS)*, Monterey, USA, 2016, IFAC-PapersOnLine, volume 49, issue 18, pp. 796-801.
2. B. Kolar, M. Schöberl, K. Schlacher, Properties of Flat Systems with regard to the Parameterization of the System Variables by the Flat Output, *Proceedings 10th IFAC Symposium on Nonlinear Control Systems (NOLCOS)*, Monterey, USA, 2016, IFAC-PapersOnLine, volume 49, issue 18, pp. 814-819.
3. B. Kolar, M. Schöberl, K. Schlacher, A Decomposition Procedure for the Construction of Flat Outputs of Discrete-Time Nonlinear Control Systems, *Proceedings 22nd International Symposium on Mathematical Theory of Networks and Systems (MTNS)*, Minneapolis, USA, pp. 775-782, 2016.
4. B. Kolar, M. Schöberl, K. Schlacher, Remarks on a Triangular Form for 1-Flat Pfaffian Systems with Two Inputs, *Proceedings 1st IFAC Conference on Modelling, Identification and Control of Nonlinear Systems (MICNON)*, Saint Petersburg, Russia, 2015, IFAC-PapersOnLine, volume 48, issue 11, pp. 109-114.
5. K. Schlacher, M. Schöberl, B. Kolar, A Jet Space Approach to Derive Flat Outputs, *Proceedings 1st IFAC Conference on Modelling, Identification and Control of Nonlinear Systems (MICNON)*, Saint Petersburg, Russia, 2015, IFAC-PapersOnLine, volume 48, issue 11, pp. 131-136.

6. B. Kolar, K. Schlacher, Flatness based Control of a Gantry Crane, *Proceedings 9th IFAC Symposium on Nonlinear Control Systems (NOLCOS)*, Toulouse, France, pp. 487-492, 2013.
7. B. Kolar, K. Schlacher, Nonlinear Control of a Gantry Crane, *Computer Aided Systems Theory - EUROCAST 2013*, volume 8112 of *Lecture Notes in Computer Science*, pp. 289-296, Springer, Berlin, 2013.

## TALKS

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### CONTRIBUTED TALKS (PEER-REVIEWED CONFERENCES)

1. Construction of Flat Outputs of Nonlinear Discrete-Time Systems in a Geometric and an Algebraic Framework, *10th IFAC Symposium on Nonlinear Control Systems (NOLCOS)*, Monterey, USA, 2016.
  2. Properties of Flat Systems with regard to the Parameterization of the System Variables by the Flat Output, *10th IFAC Symposium on Nonlinear Control Systems (NOLCOS)*, Monterey, USA, 2016.
  3. A Decomposition Procedure for the Construction of Flat Outputs of Discrete-Time Nonlinear Control Systems, *22nd International Symposium on Mathematical Theory of Networks and Systems (MTNS)*, Minneapolis, USA, 2016.
  4. Remarks on a Triangular Form for 1-Flat Pfaffian Systems with Two Inputs, *1st IFAC Conference on Modelling, Identification and Control of Nonlinear Systems (MICNON)*, Saint Petersburg, Russia, 2015.
  5. Flatness based Control of a Gantry Crane, *9th IFAC Symposium on Nonlinear Control Systems (NOLCOS)*, Toulouse, France, 2013.
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### CONTRIBUTED TALKS (CONFERENCES, WORKSHOPS)

1. Some Remarks concerning Flatness and the Parameterization of the System Variables by a Flat Output, *Joint 87th Annual Meeting of GAMM and DMV*, Braunschweig, Germany, 2016.
  2. Zeitoptimale flachheitsbasierte Regelung eines Brückenkrans, *50. Regelungstechnisches Kolloquium in Boppard*, Germany, 2016.
  3. Beispiele zur Konstruktion flacher Ausgänge für Pfaffsche Systeme, *GMA Fachausschuss 1.40*, Anif, Austria, 2014.
  4. Nonlinear Control of a Gantry Crane, *14th International Conference on Computer Aided Systems Theory (EUROCAST)*, Las Palmas de Gran Canaria, Spain, 2013.
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### INVITED TALKS

1. Konstruktion flacher Ausgänge von nichtlinearen Mehrgrößensystemen, *Regelungstechnisches Seminar*, Lehrstuhl für Regelungstechnik, TU München, 2016.

# MISCELLANEOUS

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## RESEARCH VISITS

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| 09/2015 | Institute of Cybernetics at Tallinn University of Technology, Estonia, Prof. Ü. Kotta (4 weeks)                   |
| 03/2015 | Lehrstuhl für Systemtheorie und Regelungstechnik, Universität des Saarlandes, Germany, Prof. J. Rudolph (2 weeks) |
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## ATTENDED WORKSHOPS/SUMMER SCHOOLS/COLLOQUIA

1. 48. Regelungstechnisches Kolloquium in Boppard, Germany, 2014.
2. DISC Summer School on Modeling and Control of Distributed Parameter Systems, Enschede, Netherlands, 2013.