

Prof. Dr.-Ing. Dr. h.c. mult. Alexander Verl

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Born on July 13, 1966 in Frunse (Bischkek), Kyrgyzstan



Scientific Career

- Since 2005 Full Professor and Head of the Institute for Control Engineering of Machine Tools and Manufacturing Units (ISW), University of Stuttgart
- 2014 -2016 Executive Vice President Technology Marketing and Business Models of Fraunhofer-Gesellschaft
- 2006 - 2014 Director of Institute for Manufacturing Engineering and Automation (IPA) in Stuttgart
- 2005 - 2014 Full Professor and Director of Institute for Control Engineering of Machine Tools and Manufacturing Units (ISW)
- 1997 - 2005 Founder and Managing Partner of AMATEC Robotics GmbH (since 2000 a subsidiary of KUKA Roboter GmbH)
- 1994 - 1997 Ph.D. Student at German Aerospace Center (DLR), Institute of Robotics and Mechatronics (Prof. Hirzinger, Prof. Grübel), Oberpfaffenhofen
- 1992 - 1994 Development Engineer at Siemens AG, Research Center Erlangen AUT 941 (Automation Technology Division)
- 1986 - 1991 Student, Electrical Engineering at Friedrich-Alexander-Universität Erlangen-Nürnberg

Scholarships, Awards and Faculty Functions

- 2014 Diesel Gold Medal from the German Institute of Inventions (D.I.E)
- Since 2014 Chairman of the Board of the Fraunhofer Foundation (Fraunhofer Zukunftsstiftung)
- 2012 Julius von Haast Fellowship Award - Royal Society of New Zealand
- 2012 Honorary doctoral degree (Dr. h.c.), Technical University of Cluj, Romania
- Since 2012 Member of the Board of the German Academic Society for Assembly and Industrial Robots (MHI)
- 2012 - 2015 Member of der DFG Review Board on ProductionTechnology
- 2011 - 2014 Chairman of GSaME: Graduate School of Excellence in advanced Manufacturing Engineering in Stuttgart

2010	Invention & Entrepreneurship Award (IERA Award) of the IEEE Robotics and Automation Society (IEEE RAS) and the International Federation of Robotics (IFR)
2010	Honorary doctoral degree (Dr. h.c.) by the Politehnica University of Timisoara, Romania
2010 - 2014	Member of the DFG Committee on Scientific Instrumentation
Since 2010	Chairman of the Research Committee of the International Federation of Robotics (IFR)
2008 - 2014	Committee Chairman SPS/IPC/DRIVES-Conference
Since 2008	Conference Chairman International Symposium on Robotics (ISR)
Since 2007	Member of the Board of the Industrial Consortium of the Stuttgart Research Centre for Simulation Technology
Since 2007	Principal Investigator Stuttgart Research Centre for Simulation Technology (SimTech Cluster of Excellence)
2007 - 2014	President of Deutsche Gesellschaft für Robotik (DGR)
2007 - 2012	Head of WGP Special Interest Group for Robotics and Assembly
Since 2006	Associate Member of CIRP (The International Academy for Production Engineering)
Since 2006	Member of the WGP (The German Academic Society for Production Engineering)
Since 2004	Member of the Board in SERCOS International

Ten most important publications

* Publications jointly together with UoA-researchers involved within this IRTG

§ Publications jointly together with USTUTT-researchers involved within this IRTG

A) Published in publication outlets with scientific quality assurance and book publications:

1. § Verl, A.; Boye, T.; Pott, A.: Measurement pose selection and calibration forecast for manipulators with complex kinematic structures. CIRP Annals - Manufacturing Technology, 57(1), p. 425-428, 2008.
2. Verl, A.; Heisel, U.; Walther, M.; Maier, D.: Sensorless Automated Condition Monitoring for the Control of the Predictive Maintenance of Machine Tools. CIRP Annals - Manufacturing Technology, 58(1), p. 375-378, 2009.
3. Krüger, J.; Lien, T.K.; Verl, A.: Cooperation of Human and Machines in Assembly Lines. CIRP Annals - Manufacturing Technology, 58(2), p. 1-24, 2009.
4. Verl, A.; Frey, S.: Correlation between feed velocity and preloading in ball screw drives. CIRP Annals Manufacturing Technology, 59(1), p. 429-432, 2010.
5. Altintas, Y.; Verl A.; Brecher, C.; Uriarte, L.; Pritschow, G.: Machine Tool Feed Drives, CIRP Annals - Manufacturing Technology, 60(2), p. 779-796, 2011.
6. Groh, F.; Groh, K.; Verl, A.: On the inverse kinematics of an a priori unknown general 6R-Robot. Robotica 31(3), p. 455-463, 2013.
7. Fantoni, G.; Santochi, M.; Dini, G.; Tracht, K.; Scholz-Reiter, B.; Fleischer, J.; Lien, TK.; Seliger, G.; Reinhart, G.; Franke, J.; Hansen, HN.; Verl, A.: Grasping devices and methods in automated production processes. CIRP Annals Manufacturing Technology 63(2), p. 679-701, 2014.
8. Verl, A.; Frey, S.; Heinze, T.: Double nut ball screw with improved operating characteristics. CIRP Annals Manufacturing Technology, 63(1), p. 361-364, 2014.

9. § Verl, A.; Engel, T.; Lechler, A.: Sliding Bearing with adjustable Friction Properties. CIRP Annals Manufacturing Technology, in press, 4 pages, 2016.
10. Verl, A.; Albu-Schäfer, A.; Brock, O.; Raatz A.: Soft Robotics – Transferring Theory to Application; Book, Springer Verlag, 291 pages, 2015.

B) Other publications

C) Patents

DE000019547010A1,	EP000000963816A2,	DE000019833953A1,
DE000019833953C2,	DE000019547010C2,	EP000000963816A3,
WO002005115700A1,	DE102004024378A1,	WO002005115700A4,
EP000000963816B1,	AT000000319538E,	EP000001750909A1,
CN000001953848A,	DE102006010110A1,	US020070227274A1,
DE102007048012A1,	US020090084285A1,	US020090099690A1,
JP002009082709A,	CN000100484725C,	DE102004024378B4,
US020090181781A1,	EP000001750909B1,	DE102008005859A1,
US000007681468B2,	US000007922594B2,	US000007971537B2,
DE102010021001A1,	DE102011105345A1,	EP000002572766A1,
DE102011114371A1,	US020130079169A1,	KR102013032849A,
JP002013066722A,	CN000103071291A,	US000008920251B2,
DE102013017045A1,	US020160075029A1,	EP000002572766B1

Supervised graduate students since graduation year 2011 (totalling over 30, therefore listing here only the completed once since 2013)

No.	Last Name, First Name	Degree	Title of the dissertation	Duration of thesis
1	Arbeiter, Georg	Dr.-Ing.	3-D-Umgebungserfassung für teil-autonome mobile Roboter	2008 - 2014
2	Kroll, Julia	Dr.-Ing.	Aufgabenangepasste, kontrollierte Oberflächenextraktion aus 3D-Computertomographiedaten	2008 – 2014
3	Reiser, Ulrich	Dr.-Ing.	Eine webbasierte Integrations- und Testplattform zur Unterstützung des verteilten Entwicklungsprozesses von komplexen Serviceroboter-Applikationen	2009 - 2014
4	Fischmann, Christian	Dr.-Ing.	Verfahren zur Bewertung von Greifern für Photovoltaik-Wafer	2008 - 2014
5	Zapp, Matthias	Dr.-Ing.	Semantische Wiki-Systeme in der wandlungsfähigen Produktion	2008 - 2014
6	Spiller, Alexander	Dr.-Ing.	Unterstützung der Werkstückhandhabung kooperierender Industrieroboter durch Kraftregelung	2007 - 2014
7	Pfeiffer, Kai	Dr.-Ing.	Autonome Sensorsonden für mobile Überwachungsroboter und deren Ausbringstrategien	2008 - 2014

8	Pflüger, Marius	Dr.-Ing.	Entwicklung eines robusten Verfahrens zur Farbbestimmung von Zähnen auf Basis spektraler Daten	2008 - 2014
9	Connette, Christian	Dr.-Ing.	Kinematische Modellierung und Regelung omnidirektionaler, nicht-holonomer Fahrwerke	2007 - 2013
10	Rost, Arne	Dr.-Ing.	Untersuchung von Antrieben mit Kunststoff-Faserseilen für den Einsatz in Leichtbau-Gelenkarmrobotern	2008 - 2013
11	Frey, Siegfried	Dr.-Ing.	Verbesserung des dynamischen Verhaltens von Vorschubantrieben durch semiaktive Dämpfung	2008 - 2013
12	Hoffmeister, Michael	Dr.-Ing.	Modelle zur aufgabengeführten Produktionsausführung in der wandlungsfähigen Produktion	2007 - 2013

Most important research grants since 2011

No.	Research Project	Funding Period	Name(s) of the principal investigator(s)	Funding source and reference number
1	Industrial Powerline Communications for machine tools, industrial robots and production cells	2010 - 2014	Verl, A.	DFG
2	Modular structured, (re)configurable machine for micro machining by means of cooperative motion generation	2011 - 2015	Verl, A.	DFG
3	ECOMATION Steuerung des Energieverbrauchs in der Fertigung und Steigerung der Energieeffizienz durch Automatisierung	2009 - 2014	Verl, A.	DFG FOR 1088
4	Parallelization of the NC Channel for the Execution on Multicore Architectures	2014 - 2016	Verl, A.	DFG
5	Development and analysis of methods to increase fault tolerance of numerical control systems in safety-critical applications	2010 - 2012	Verl, A.	DFG