

**Dr.-Ing.**  
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Born October, 1968

### Career

2005-present Head of the Advanced Manipulation Group / Institute of Robotics and Mechatronics,  
German Aerospace Center DLR  
2003-2005 Senior researcher / Institute of Robotics and Mechatronics, DLR  
1996-2003 Research assistant / Institute of Robotics and Mechatronics, DLR

### Research Interests

identification, simulation and control of robotic systems, nonlinear control, light-weight arms, control of flexible joint manipulators, soft robotics, redundant robots, control of mechatronic systems, haptic feedback, human-robot interaction, safety and dependability in robotics, automatic assembly strategies

### Honours

- Best Paper Award of the *at-Automatisierungstechnik* Journal 2005
- Faculty award for the diploma thesis, Technical University Timisoara, 1993

### Activities/Competence

- Reviewer of journals (e.g. IEEE Transactions on Robotics, International Journal of Robotics Research, International Journal on Mechatronics, IEEE Transactions on Mechatronics, Int. Journal of Autonomous Robots, International Journal of Mechatronics) and conferences (e.g., ICRA, IROS)
- Invited Speaker on Tutorials and Workshops (e.g. IFIP Workshop on Safety and Dependability in Robotics, Tucson, Arizona, Feb. 2006. Second Int. Workshop on Control Problems in Robotics and Automation, Las Vegas, Nevada, Dec. 2002 Tutorial IROS 2002: Towards Intelligent Robotic Manipulation)
- Program Committee Member at ICRA 2005, Barcelona, Spain (2007)
- Scientific Consultant of Spin-off Companies (SensoDrive GmbH, eStop GmbH)

### Most Important Relevant Publications (Selected)

- [1] **A. Albu-Schäffer** and G. Hirzinger. A globally stable state feedback controller for flexible joint robots. *Journal of Advanced Robotics, Special Issue: Selected papers from IROS 2000*, 15(8):pp.799–814, 2001.
- [2] **A. Albu-Schäffer** and G. Hirzinger. Cartesian compliant control strategies for light-weight, flexible joint robots. In D. Prattichizzo A. Bicchi, H. Christensen, editor, *Control Problems in Robotics. Springer tracts in advanced robotics*, pages pp.135–151. Springer Verlag Berlin Heidelberg, 2003.
- [3] **A. Albu-Schäffer**, C. Ott, and G. Hirzinger. Passivity based cartesian impedance control for flexible joint manipulators. *6-th IFAC Symposium on Nonlinear Control Systems*, 2:1175–1180, 2004.
- [4] **A. Albu-Schäffer**, C. Ott, and G. Hirzinger. A passivity based cartesian impedance controller for flexible joint robots – Part II: Full state feedback, impedance design and experiments. *IEEE Int. Conf. of Robotics and Automation*, pages 2666–2673, 2004.
- [5] **A. Albu-Schäffer**, C. Ott, and G. Hirzinger. Constructive energy shaping based impedance control for a class of underactuated Euler-Lagrange systems. *IEEE Int. Conf. of Robotics and Automation*, pages 1399–1405, 2005.
- [6] **A. Albu-Schäffer**, Ch. Ott, and G. Hirzinger. A unified passivity based control framework for position, torque and impedance control of flexible joint robots. *Int. Symposium on Robotics Research*, October 2005.
- [7] G. Grunwald, G. Schreiber, **A. Albu-Schäffer**, and G. Hirzinger. Programming by touch: The different way of human-robot interaction. *IEEE Transactions on Industrial Electronics*, 50(4):pp.659– 666, 2003.
- [8] G. Grunwald, G. Schreiber, **A. Albu-Schäffer**, and G. Hirzinger. Touch: The intuitive type of human and robot interaction. In *Advances In Human Robot Interaction*, volume 14. Springer Verlag, 2004.
- [9] G. Hirzinger, K. Landzettel, B. Brunner, M. Fischer, C. Preusche, D. Reintsema, **A. Albu-Schäffer**, G. Schreiber, and B. Steinmetz. DLR’s robotics technologies for on-orbit servicing. *Journal of Advanced Robotics. Special Issue: Service robots in space*, 18(2):pp.139–174, 2004.
- [10] Ch. Ott, **A. Albu-Schäffer**, A. Kugi, S., and G. Hirzinger. Kartesische Impedanzregelung von Robotern mit elastischen Gelenken: Ein passivitätsbasierter Ansatz. *at-Automatisierungstechnik*, pages pp. 378–388, August 2005. **Best Paper Award**