

## Prof. Dr.-Ing. Gerd Hirzinger

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Born January 17, 1945

### Career

1992-present	Director of DLR's Institute of Robotics and Mechatronics
1991-present	Joint professorship with the Technische Universität München
1988-1991	Member of the IEEE administrative committee of the IEEE Society "Robotics and Automation"
1987-1993	Initiation and technical direction of ROTEX - the first robot in space that has successfully flown with spacelab D-2-mission in April 1993
1987-1994	Rejection of different chairs in "robotics" offered by European Technical Universities like the ETH Zurich/Switzerland
1985	Election as chairman of the German "council on robot control". Initiation and organization of the first German conference on robot control
since 1976	Head of the Automation and Robotics Division at DLR

### Research Interests

telerobotics and space robotics, lightweight robot arms and multifingered hands, 3D-world modelling and sensor fusion, intelligent motion planning, aerial robotics

### Honours

- Honorary Citizen of Budapest Tech (The union of Budapest Technical Universities), 2005
- IEEE Pioneer Award of the Robotics and Automation Society, "... for his pioneering research in mechatronic devices, teleoperation, articulated hands and lightweight robots, and his leadership in space robotic programs in Europe", 2005
- Order of merit of the Federal Republic of Germany, 2004
- Member of "Wall of fame IT" Heinz Nixdorf-Computermuseum, Paderborn, 2004
- Honorary Professor, Harbin Institute of Technology / China, 2003
- Bavarian Innovation Award, 2002
- Golden Hermann Oberth Medal, 2002
- IEEE Fellow Award, 1997
- "Karl Heinz Beckurts Award", Germany's most important award for outstanding promotion of the partnership between science and industry, 1996
- JARA (Japan Robot Association) Award, 1995
- Gottfried W. Leibniz Award, Germany's highest scientific award, 1995
- "Annual Award" of the German Society for Pattern recognition, 1994
- "Joe Engelberger Award" (advancement of robotic science in the service of mankind), 1994

### Most Important Relevant Publications (Selected)

- [1] **G. Hirzinger**, N. Sporer, M. Schedl, J. Butterfaß, M. Grebenstein. Torque-Controlled Lightweight Arms and Articulated Hands: Do We Reach Technological Limits Now?. *International Journal of Robotics Research*, 23, 4-5, S. 331-340, 2004.
- [2] C. Borst, M. Fischer, **G. Hirzinger**. Calculating Human Like Grasp Shapes: Pinch Grasps. *Advances In Human Robot Interaction, Series : Springer Tracts in Advanced Robotics*, Vol. 14, Springer Verlag, 2004.
- [3] R. Cortesao, R. Koeppel, U. Nunes, **G. Hirzinger**. Data Fusion for Robotic Assembly Tasks Based on Human Skills. *IEEE Transactions on Robotics*, December, Vol. 20, No. 6, S. 941-952, 2004.
- [4] C. Ott, C. Borst, U. Hillenbrand, B. Brunner, B. Bäuml, **G. Hirzinger**. The Robutler: Towards Service Robots for the Human Environment. In *ICRA 2005 IEEE Intl. Conference on Robotics and Automation*, Barcelona, Spain, April 18-22, IEEE, CD ICRA 2005, S. 1399-1405, 2005.
- [5] U. Hillenbrand, B. Brunner, C. Borst, **G. Hirzinger**. The Robutler: a Vision-Controlled Hand-Arm System for Manipulating Bottles and Glasses. In *ISR 2004 35th International Symposium on Robotics*, Paris-Nord Villepinte Exhibition Centre, France, 23-26 March, IFR, CD, 2004.
- [6] **G. Hirzinger**. From Robot Vision to Multisensory 3D-World Modelling. In *XXth ISPRS Congress International Society for Photogrammetry and Remote Sensing*, Istanbul, Turkey, 12.-23. July, Istanbul Technical University, Invited key lecture, 2004.
- [7] M. Suppa, P. Wang, K. Gupta, **G. Hirzinger**. C-space Exploration Using Noisy Sensor Models. In *IEEE International Conference on Robotics and Automation ICRA*, New Orleans, Louisiana, USA, April 26 - May 1, IEEE, Proceedings, S. 4777-4782, 2004.
- [8] C. Ott, A. Albu-Schäffer, A. Kugi, S. Stramigioli, **G. Hirzinger**. A Passivity Based Cartesian Impedance Controller for Flexible Joint Robots - Part I: Torque Feedback and Gravity Compensation. In *IEEE International Conference on Robotics and Automation ICRA*, New Orleans, Louisiana, USA, April 26 - May 1, IEEE, Proceedings, S. 2659-2665, 2004.
- [9] R. Lampariello, S. Agrawal, **G. Hirzinger**. Optimal Motion Planning of Free-Flying Robots. In *IEEE International Conference on Robotics and Automation (ICRA)*, Taipei, Taiwan, Sept. 14-19, IEEE, CD, 2003.
- [10] C. Ott, A. Albu-Schäffer, A. Kugi, **G. Hirzinger**. Decoupling Based Cartesian Impedance Control of Flexible Joint Robots. In *IEEE International Conference on Robotics and Automation (ICRA)*, Taipei, Taiwan, Sept. 14-19, IEEE, CD, 2003.