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Curriculum Vitae

Personal data

Born: August 14, 1938, in Burg, Germany
Nationality: German
Marital Status: Married

Educational and professional history

1956 to 1964 Universities of Göttingen, Munich, Hamburg and Kiel; studies of physics, mathematics, astrophysics and oceanography
1961 to 1965 University of Kiel, Germany; research in applied physics
1964 Doctor of Sciences degree in physics, mathematics and oceanography (University of Kiel, Germany)
1965 to 1969 Assistant Geophysicist, University of Hawaii, Hawaii Institute of Geophysics; research in physical oceanography
1969 to 1975 Project manager with Krupp, a major German industrial corporation; management of research and development projects in ocean engineering and computer design
1975 to 2003 Professor and head of the Institute of Measurement Science, Bundeswehr University München; main research interests: robot vision; intelligent robots operating autonomously in the real world, e.g., on roads, in unstructured terrain and indoors; humanoid service robots; situated human-robot communication, e.g., by spoken language; dependability of complex robotics systems
2003 Distinguished Visiting Professor (JSPS), Nagoya University, Graduate School of Engineering
Since 2003 Professor and head of the Intelligent Robots Laboratory, Faculty of Aerospace Engineering, Bundeswehr University Munich, Germany; same research as above.
Since 2004 Visiting Professor, Nagoya University, Graduate School of Engineering

Memberships, honors etc.

Member, IROS Advisory Council (since 1990) and IROS Fellow.

Member, Administrative Committee of the IEEE Industrial Electronics Society (1993-1998).

General Chairman of the 1994 IEEE/RSJ/GI International Conference on Intelligent Robots and Systems, IROS '94.

Honorary Professor of the Changsha Institute of Technology (China; since 1993).

Nakamura Prize for the Advancement of the Technology of Intelligent Robots and Systems, in recognition of contributions to the advancement of the technology of intelligent robots and systems over a decade (1997).

IAPR/MVA prize for the most influential paper of the decade (1998).

Associate Editor of the International Journal of Humanoid Robotics (IJHR)

Some research milestones

- 1987 Vision system for the world's fastest fully autonomous road vehicle (96 km/h)
- 1990 Novel approach to motion stereo, allowing highly accurate range measurements in real time using an uncalibrated video camera
- 1992 Vision system for the real-time recognition of traffic scenes, allowing a driverless motor car to run at a normal speed in ordinary freeway traffic
- 1994 Vision-guided mobile robot *ATHENE* with a novel situation-oriented behavior-based system architecture, able to explore and chart networks of corridors and to navigate in them autonomously
- 1996 Calibration-free vision-guided learning robot, able to manipulate autonomously a variety of objects and being extremely robust against unmodeled disturbances of its characteristics, e.g., the camera arrangement
- 1999 Humanoid robot *HERMES* with a highly modular hard- and software architecture based on perception, situation recognition and skills; it is able to perform a variety of transportation and other service tasks and to communicate with humans in a situation-dependent way by gestures and by spoken and written natural language.
- 2002 Humanoid robot *HERMES* has completed a long-term dependability test by serving, together with intelligent robots from all over the world, for 6 months in the special exhibition "Computer and Brain" in the Heinz Nixdorf MuseumsForum in Paderborn, the world's largest computer museum. There he chatted with visitors in natural language in German, English and French, answered questions and performed services as requested by the visitors. He survived the daily hard work (usually 2 hours, sometimes 12 hours per day) far away from his "fathers" where no easy access to repair and maintenance was available, and even with presenters who do not know much about robot technology. According to the museum staff, *HERMES* is one of the few experimental robots that could regularly be demonstrated in action, and among them they consider him the most intelligent and most dependable one.

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