Part I: Sensor and Actuator Interface Electronics

Sensors and actuators connect the macroscopic analog world with the computer through Interface Electronics. These interface circuits have the task to amplify, filter, multiplex, convert from analog to digital and vice versa.

The topic of interface electronics is covered by 6 tutorial papers:

The first introductory paper from Anton Bakker, Analog Devices Inc., San José, California, USA, presents solutions to general interface issues, such as offset and accuracy.

The second paper by Andrew T.K. Tang, Analog Devices, San José, California, USA, is about low-offset OpAmps.

The third contribution by Christoph Hagleitner, IBM Zürich, Switzerland, presents a wide platform for multi-sensor interfacing.

The fourth paper by Roland Thewes, Infineon Technologies A.G., Munich, Germany, discusses the design of an electro-chemical interface for DNA detection.

The fifth and sixth papers by Christian Enz, CSEM, Neuchatel, Switzerland, and Bernard E. Boser, UC Berkeley, California, USA, respectively, offer insight in the design and organisation of wireless sensors and their networks.

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