



## Institute for Human Centered Engineering

«The most wonderful sensation for young engineers is to see their ideas and their creativity leading into a useful and economically successful product.»

Prof. Dr. Marcel Jacomet, Head of HuCE



Bern University  
of Applied Sciences

# Institute for Human Centered Engineering HuCE

We combine new technologies and our know-how we have acquired from research projects in an interdisciplinary way to develop new products for industry and hospitals.

## Core Competences

Our core competences are:

- Complex control, signal and image processing
- Research, analyses and implementation of hardware-algorithms into FPGAs and ASICs
- Development of miniaturized systems, from prototypes to industrial volume ramp-up
- Computer perception and virtual-reality simulation
- Research in optical coherence tomography (OCT) technology and applications
- Sensors and sensor networks
- Development of biometric authentication algorithms
- Biomedical engineering and applications

We apply our broad core-competences in research and design projects both in industrial and in the area of biomedical engineering applications.

## Team

Roughly 60 staff members are working at HuCE. More than 40 young engineers and PhD candidates are carrying out research and industrial projects together with 18 professors.

## Research Groups

**microLab:** hardware-algorithms, microelectronics, signal processing, control, fast prototyping, low-power and high-speed ASIC design

**optoLab:** optics, OCT

**roboticsLab:** micro-robotic, mechatronics

**scienceLab:** numerics, statistics, data-mining

**cpvrLab:** image processing, medical image analysis, haptics, biometry and authentication

**BME Lab:** biomedical engineering, biomechanics, intelligent medical instruments, electronic implants and sensors

## Specialties

Various spin-off companies emerging from the HuCE institute have been founded in the last few years, e.g. Delta-Robotics Inc. in the medical field and AXSionics Inc. in the security field.

HuCE is equipped with modern infrastructure for fast-prototyping in the mechanical and electronic area, including a 3D plotter, ASIC die- and wire bonder, and a SMD/BGA pick, place and soldering system.

Our flexible collaboration model for services and R&D projects allows us to start industrial projects within a week.

## Contact

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