AGH University of Science and Technology
Biocybernetics Laboratory

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Biocybernetics Laboratory is the leading team in Poland in fields of the real-time image processing and neural networks. During last twenty years we have acquired huge experience in creation image processing algorithms implemented in software and hardware architecture.

IMAGE ANALYSIS & RECOGNITION - VISION SYSTEMS

Road traffic analysis using video-detection (classification and counting of vehicles, evaluation of traffic queue length)

Development of hardware architectures for real-time image pro-cessing implemented in FPGA & DSP devices

Medical applications
detection and automated recognition of pathologically modified zones in pancreatic duct images, using pattern recognition, neural networks and context-free grammar of LR(1) type

Applications: emergency detection in glass-drawing processes (industrial), microscope images recognition (biological)

NEURAL NETWORKS FOR PATTERN RECOGNITION

Selection of the structure and learning parameters of a *backpropagation* network using the example of hand-written digit recognition

Recognition of objects in log-polar and log-Hough space using neural networks

Evaluation of the sensitivity of neural networks to changes in the degree of input image data reduction

Cooperation Request

- Design and evaluation of image processing algorithms
- Software and hardware vision systems
- FPGA IMAGING: real-time implementations
- Cognitive vision, image understanding

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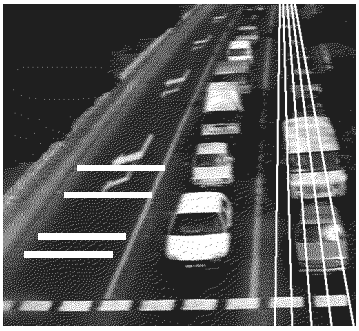

Facts & dates

The AGH University of Science and Technology, second largest technical university in Poland, employs about 2000 faculty members serving approximately 30 000 students within undergraduate, postgraduate and continuing education programmes.

Biocybernetics Laboratory research profile:

- Image Analysis and Recognition
- Vision Systems
- FPGA Imaging (real-time systems)
- Neural Networks for Pattern Recognition
- Analysis of Biomedical Signals (ECG, pathological speech)

Staff members:

- Head Professor Ryszard Tadeusiewicz (picture)
- 10 researchers with PhD, 5 assistants, 7 PhD students