

Barriers in University-Industry Cooperation

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Research orientation:

- **Artificial Intelligence**
- **Machine Learning & Robotics**
- **Computer Vision**
- **Biomedical Engineering**

141 academicians (110 FTE):

- **20 faculty members**
- **73 research fellows and 48 Ph.d. students**

Mission Objectives:

- **Perform internationally recognized research, build teams of research excellence**
- **Support industrial take-up of research**
- **Demonstrate potential of industry-university cooperation**
- **Undergraduate and graduate education in the field of cybernetics**

EU Center of Excellence since 2000



Selected Industrial Contracts and Grants



- **Rockwell Automation:** Distributed artificial intelligence
- **BAE Systems:** UAV collision avoidance systems
- **Medtronic:** SW for pacemakers and other medical devices
- **Honeywell:** Observing people by video cameras
- **TOYOTA Motor Corporation:** Computer vision - blue sky research
- **Volkswagen:** Image processing from the car in motion
- **DENSO Automotive:** Agent-based on-board car diagnostics
- **CADENCE Design Systems:** Multi-agent modeling of IC design process
- **Samsung:** Reconstruction of images
- **Google:** Image-based search, security systems
- **Texas Instruments:** Control and interfacing of the digital camera
- **Hitachi:** Image processing and face recognition
- **Siemens:** Planning and scheduling for in-store logistics
- **US Air Force Research Lab, U.S.Navy Research, U.S. Army, NASA:** Deployment of Agent-based technology





Direct transfer of know-how (patents, algorithms, methodologies): For large companies with own R&D units

Spin-off and Start-up Companies:

- **CERTICON**, a.s.: (100+ employees): Software development, Network integration services, Software testing, Predictive algorithms, Design planning and scheduling
- **ProTyS**, a.s.: (43) Real-time Control Software development & testing, Intelligent control, fuzzy logics
- **NeoVision** s.r.o.: (21): Computer Vision
- **Eydea**, s.r.o. (5): Image Processing
- **Cognitive Security**, s.r.o.(2): Network Security

National Center for Applied Cybernetics: CTU, TU Brno, WBU,

- Academy of Science, CertiCon, Neovision+ 7 other companies. The main goal: Technology Transfer, Spreading Excellence





For an efficient transfer needed:

- competitive & applicable results + transfer vehicle

**Universities have to help in building the transfer infrastructure,
industry brings funding**

But:

- **The University environment is “self-embedded” and doesn’t want to become “open” to the outside world, visible resistance**
- **System of University management supports isolation of the academic world**
- **Both the legislation and the IPR protection processes are too complicated and expensive**



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- Equally distributed funding leads to lack of excellent and applicable results
- **Strong** and clear declaration of innovation processes as **the top priority on the country level** is missing
- Lack of motivation for innovations
- Everybody is afraid to clearly select and label the best universities – leaders in technology development:
 - **Without leaders there are no followers!!**
- **Education** aimed at university-industry cooperation and innovations **is missing**
- Lack of support by public media
- **Technology parks don't play their catalytic role:** They are not built around centers of the truly competitive knowledge



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- **Funding:**
 - **Plenty of industry/private money available!**
- **But:**
 - **There is not enough of entrepreneurship-oriented thinking in the academic world**
 - **There is no infrastructure and environment to absorb the funding in an appropriate way**
 - **Lack of tradition and experience in venture investments**

