FACULTY OF INFORMATICS

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Botanická 68a
602 00 Brno, Czech Republic

> 90
Ph.D. students

The Faculty of Informatics was established in 1994.

Today, with more than 2,300 studentsit offers study programmes at Bachelor's, Master's and Doctoral levels in various fields of studies such as computer science, Informatics, Applied Informatics and Teaching for Secondary Schools, Computer Systems and Technologies.

Formal Modelling and Verification of Computer Systems

/ Modeling and verification of infinite-state stochastic systems
/ Verification and analysis of computer programs
/ Game theory and machine learning in security and formal verification
/ Distributed and cloud computing in formal verification

Quantum Information Processing

/ Quantum information theory and quantum communication
/ Quantum cryptography protocols and security
/ Real-world randomness and random number generators

Combinatorial Algorithms and Complexity

/ Parameterized complexity, logic and algorithmic metatheorems
/ Structural graph theory and width parameters
/ Computational geometry and graph crossing numbers

Computer Graphics and Visualization

/ Interaction in virtual environments
/ Analysis and visualization of protein structures
/ Data visualization

Biomedical Image Analysis

/ Development and study of image analysis methods for highly automated processing of multidimensional biomedical images
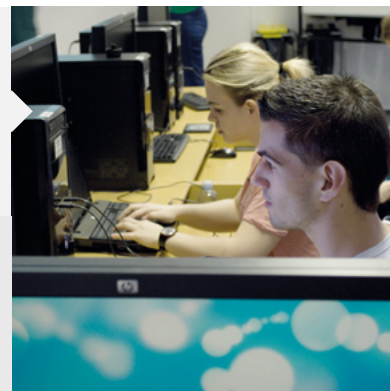/ Segmentation, tracking, and simulation of microscopy images of cells

Computational Systems Biology

/ Scalable methods and tools for modeling complex biological systems
/ Automated parameter estimation in biological models

Data Intensive Systems and Applications

DISA.fi.muni.cz

/ Similarity-based indexing and searching
/ Content-based multimedia processing
/ Distributed data organization

Large Distributed Systems and Networks

/ Virtualization, Grids, Clouds, and AAI
/ Accelerated computing and applications
/ Software Defined Networks
/ Collaborative environments
/ Complex networks

Machine Learning and Artificial Intelligence

/ Educational data mining, AI in education, adaptive learning
/ Big data analytics, outlier detection, graph and sequence mining
/ Scheduling and planning, heuristic search, metaheuristics

Digital Libraries and Electronic Publishing

MIR.fi.muni.cz

/ Semantic publishing, knowledge management
/ Digital libraries, document digitization, analytics
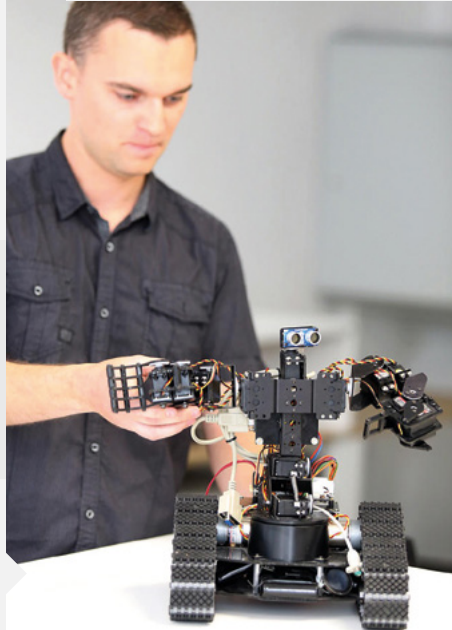/ and visualization
/ Digital typography, digital humanities

Natural Language Processing

http://nlp.fi.muni.cz/en/NLPCentre

/ Ontologies and intelligent knowledge processing
/ Syntactic and semantic analysis
/ Statistical processing of very large texts
/ Machine translation

Architecture of Embedded Systems

/ Design of real-time systems
/ Modeling of digital systems hardware
/ Design of fault tolerant systems and reliability of digital systems

Computer and Communications Security

/ Computer network and smart card security, and related cryptographic applications
/ Authentication and use of cryptography for creation and operation of secure systems

Enterprise and Critical Systems

/ Software architectures and reliability
/ Smart-grids modeling, simulations, and security
/ Visualizations in computer security
/ Constructive communication in software development