

Technological Directory - Graduate School and Faculty of Information Science and Technology (2020)

Department of Information and Computer Science

| Discipline | Field | Expertise | Keyword 1 | Keyword 2 | Keyword 3 | Open to consultations on | Lab | Researcher |
|------------------------------------|--|---|-------------------------|----------------------------|----------------------------------|---|--------------------------------------|--|
| System LSI | Integrated circuit design | LSI design simplification and performance enhancement | High speed circuits | Low power circuits | Semiconductor devices | High speed circuit design, low power circuit design, logic circuit technology, memory circuit technology, CAD technology, semiconductor device technology | Nano-Integrated System Lab | Hiroshi MAKINO, Professor |
| General | Science education/educational technology | Science education | Experimentation | Computer vision | simulation Simulation | Natural science education utilizing multimedia | Measurement & Simulation Physics Lab | Kenichi FUJII, Professor |
| Software | Decision-making support | Parallel and Distributed simulation | Multi-agent simulation | High performance computing | Optimization | (1) Multi-agent modeling and simulation (2) High performance parallel computing (3) Optimization technology (4) Artificial Intelligence | Intelligent Application Systems Lab | Atsuo OZAKI, Professor |
| Software | Modeling and Simulation | Semiconductor device simulation | Computer simulation | Semiconductor devices | Technology computer-aided design | Modeling and simulation of semiconductor devices, Monte Carlo simulation, Drift-Diffusion simulation, Compact modeling | Applied Mathematical Systems Lab | Yoshinari KAMAKURA, Professor |
| Mathematical and physical sciences | Physics | Mathematical physics | Quantum field theory | String theory | Quantum topology | Mathematical modeling of physical phenomena | Mathematical Physics Lab | Hiroyuki Fuji, Professor |
| Control engineering | Measurement and control system engineering | Vehicle control engineering | Vehicle automation | Location measurement | Automatic guidance | Location measurement of automobile and other vehicles, guidance system technologies | Vehicle Control Lab | Nobuo KOMATSU, Associate Professor |
| Software | Programing languages and systems | Compiler | Development environment | Processor architecture | Code generation and optimization | Design and implementation of optimizing compilers of programing languages for microprocessors | Processor Software Lab | Yasuhiro NUNOMURA, Associate Professor |

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|---------------------|-------------------------------|------------------------------------|----------------------------|----------------------------|------------------------|--|---|--|
| Computing systems | Embedded systems | Hardware-Software Co-design | Embedded systems | Microcomputer applications | FPGA | (1) Development of devices with applied microcomputers (2) Circuit design utilizing FPGA | Embedded Systems Lab | Hideo ARAKI, Associate Professor |
| Computing systems | System architecture | Hardware-Software Co-design | System optimization | Image Recognition | FPGA | System optimization considering both hardware and software, real time and low power image recognition, | System Architecture Lab | Chikako.NAKANISHI, Associate Professor |
| Computer systems | Computer architecture | Processor architecture | Processor architecture | Speculative execution | Multithread processing | High-speed technology in processor design | Processor Architecture Lab | Masahito KONISHI, Assistant Professor |
| Computer systems | Neuromorphic engineering | System design for image processing | Neuro-inspired | Embedded systems | Image processing | Development of algorithms and architecture for image processing inspired by the visual nervous system | Neuromorphic Systems Lab | Hirotsugu OKUNO, Assistant Professor |
| Information science | Visual information processing | Image processing | High dynamic range imaging | Human visual system | Visualization | Development of high dynamic range imaging algorithms | Image Processing Lab | Takao JINNO, Assistant Professor |
| Human informatics | Intelligent informatics | Machine learning | Reinforcement learning | Neural network | Intelligent robot | Learning algorithms | Learning & Advanced Intelligent Systems Lab | Naoki KOTANI, Assistant Professor |