



GRACE

CENTER FOR GLOBAL RESEARCH IN ADVANCED SOFTWARE SCIENCE AND ENGINEERING

Promoting world-leading research, education and practice for cutting-edge software engineering

The GRACE Center is a world-leading software research center at the National Institute of Informatics engaged in research, education and practical work in alliance with research organizations from Japan and overseas and as part of industry-academic collaboration. The GRACE Center aims at laying the foundation of 21st century software, while developing world-class researchers and engineers that will lead the next generation.

RESEARCH

PRACTICE

EDUCATION

grace-center.jp/en

Aiming to become a national center for conveying information on quality manufacturing founded on science

The following issues have emerged through software development initiatives in recent years.

- Both fundamental and advanced research in Japan is insufficient for assuring the safety of large-scale software systems.
- There is a disparity between academic research results and their practical application.
- Not enough top-level SEs understand science.

The GRACE Center aims at producing leading international research results through its core activity of research, but at the same time also at training world-class researchers (Top REs) and engineers (Top SEs) through its operations based on research, education and practical work. In addition, the Center provides the following functions as a hub for collaborating organizations.

- 1 A hub for ties with international research institutions**
for mid- to long-term fundamental and advanced research and development aimed at producing practical applications
- 2 The hub for collaboration between the industry and academia**
application for practical issues through joint research
- 3 The hub for human resource development**
base for developing and disseminating teaching materials and the provision of education

GRACE Center is an international research center belonging to the National Institute of Informatics. The Center promotes the world's highest level of research, education and practice for leading-edge software engineering.

RESEARCH

Connecting the intelligence of the world and dispatching new intelligence

Research and development activities are being conducted based on scientific methods and tools. In collaboration with research institutes in Japan and abroad, the Center provides the world with leading-edge theoretical and practical research results in software engineering.

- Promoting international cooperation
- Promoting inter-university collaboration
- Hosting research symposia

EDUCATION

Educating Japan in software technology

The Center provides education that integrates leading technologies with the industry. Efforts are being made to bring up Top Software Engineers (Top SEs) who are capable of solving actual problems in practice using state-of-the-art technologies and Top Researchers (Top REs) who are capable of developing and constructing research theories.

- Development of solution-oriented practical teaching materials
- Operation of a portal to disseminate teaching materials
- Providing group study lectures
- Support and guidance for researchers



Aiming to become a national center for realizing innovations through a tripartite approach

Shinichi Honiden,
Director, GRACE Center

In recent years, defects in software systems have led to a succession of major social issues. As a result, the vulnerability of software systems has become apparent and today it is widely recognized that software systems represent risks to the information society. Furthermore, the software systems being developed have increased in scale, complexity, sophistication and diversity each year.

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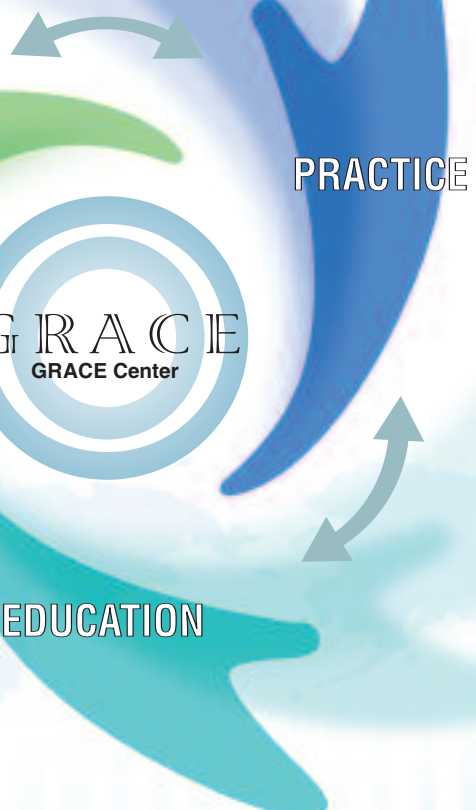
RESEARCH

Top RE

world-class researchers
(Top REs)

Top SE

top-level engineers
(Top SEs)



PROJECT

Top SE Project

A practical educational program aiming at the cultivation of software engineers who have acquired advanced development technologies, according to the concept, "intellectual engineering education based on science"

Leading-Edge IT Specialists Joint Project to Improve and Share Teaching Materials

Promotion of project for perfecting and disseminating teaching materials for leading-edge IT specialists

Software Engineering Project for Security and Safety

Research and development of systematic methodologies based on theories for developing secure systems

Research into Linguistic Foundation Technologies for Bidirectional Model Transformation

Research and development of linguistic foundations for bidirectional model transformation that aim to ensure software reliability and enhance productivity

PRACTICE

Bridging the gap between research and business

The Center promotes "solution-oriented joint research" in which business issues are solved using the leading-edge research results. In addition, business is given the opportunity to evaluate the outcomes of joint research.

- Promotion of industry-academia collaboration
- Promotion of practical applications
- Discovery of research issues
- Hosting of symposia to present practical case studies

Companies supporting Top SE

NTT Comware Corporation

NTT Data Corporation

Kajima Corporation

CSK Systems Corporation

SoftBank Telecom Corporation

Denso Corporation

Toshiba Corporation

Toshiba Solutions Corporation

NEC Corporation

Nihon Unisys, Ltd.

Hitachi, Ltd.

FeliCa Networks, Inc.

Fujitsu Laboratories Ltd.

Matsushita Electric Industrial Co., Ltd.

Mitsubishi Research Institute, Inc.

Mitsubishi Electric Micro-Computer Application Software Co., Ltd.

Melco Power Systems Corporation

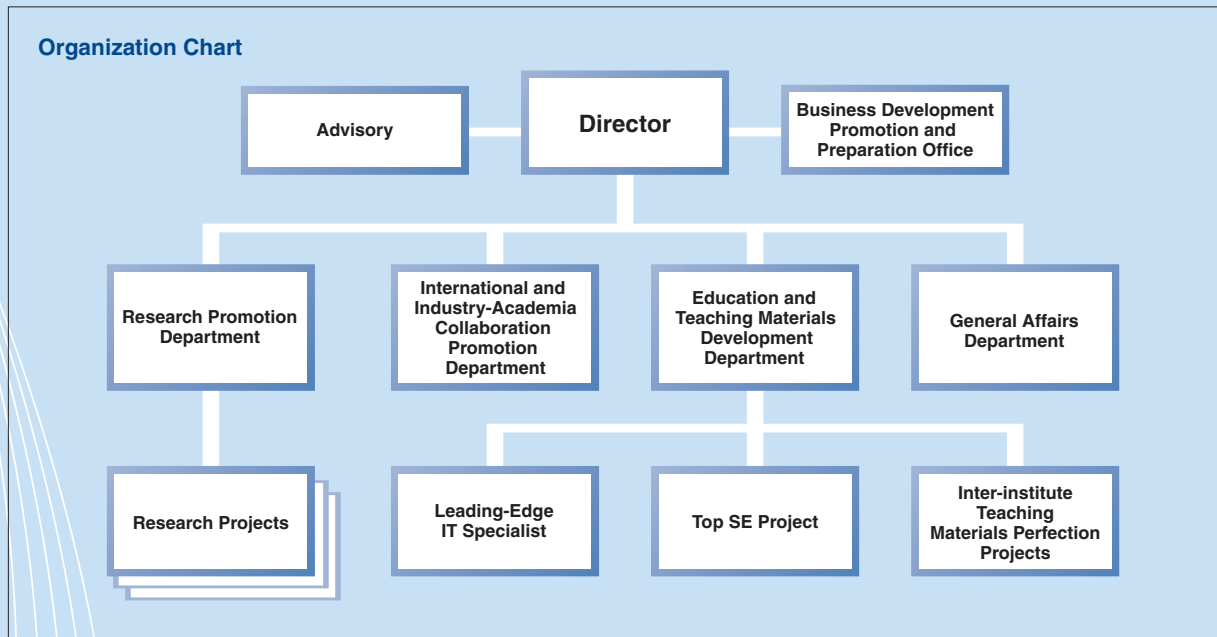
Under these circumstances, there is an expectation that genuinely useful and solid research results will yield the efficient development of dependable, high-quality software systems. For this purpose, there is spiraling innovation through mutual influence between the research side comprising universities and research institutes and the corporate development side. In addition, it is nec-

essary to cultivate high-level human resources capable of implementing the innovations. Therefore, our Center intends to engage in tripartite operations consisting of research, practice and education founded on international collaboration and the collaboration between industry and academia, thereby giving material substance to true innovation.

PROFILE

English Name	CENTER FOR GLOBAL RESEARCH IN ADVANCED SOFTWARE SCIENCE AND ENGINEERING
Abbreviation	GRACE Center
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Established	January 2008
Director	Shinichi Honiden

Organization Chart



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