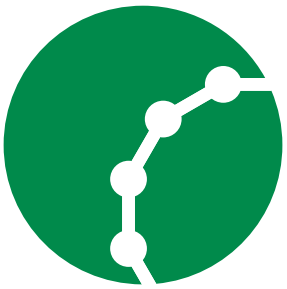
August 27-29, 2012



CollabTech

2012 HOKKAIDO JAPAN

Sponsored by IPSJ SIG Groupware and Network Services
HIS SIG Communication Enhancement
VRSJ SIG Cyberspace

The Sixth International Conference on Collaboration Technologies

Conference Proceedings

http://www.collabtech.org/

Copyright © 2012 by Information Processing Society of Japan

All right reserved. No part of this book may be reproduced, stored in a retrieval system, or transmitted, in any form or any means, without permission in writing from the publisher.

ISBN 978-4-915256-86-8 C3804

Publisher:
Information Processing Society of Japan
Kagaku-Kaikan (Chemistry Hall) 4F
1-5 Kanda-Surugadai, Chiyoda-ku, Tokyo, 101-0062 Japan
Tel: +81-3-3518-8374
Fax: +81-3-3518-8375

Message from the General Co-Chairs

Welcome to CollabTech 2012, the 6th International Conference on Collaboration Technologies in Sapporo, Hokkaido, Japan.

The CollabTech 2012 conference aims to offer a unique forum for academics and practitioners to present and discuss innovative ideas, methods, or implementations that relate to collaboration technologies, which include diverse areas of pervasive, social, and entertainment computing. In this conference, for the paper selection, we have considered coolness or impact of the technology. As a result, we are excited to find that we could select stimulus papers from various countries.

We would like to thank the Program Co-Chairs, Organizing Committee members including the International Advisory Board, PC members and reviewers for their efforts in making this conference possible. We especially appreciate regarding the help and support from Dr. Hidetoshi Nonaka, Hokkaido University, Japan as a local arrangement co-chair. We also thank the SIG on Groupware and Network Services of the Information Processing Society of Japan (SIG GN IPSJ), SIG on Communication Enhancement of Human Interface Society (SIG-CE HIS), SIG on Cyberspace of the Virtual Reality Society of Japan (SIG-CyberSpace VRSJ) for supporting this conference.

We are grateful for the financial support from the Conference Benefactors: Support Center for Advanced Telecommunications Technology Research (SCAT), and Hitachi, Ltd.

We hope that this conference will be fruitful and productive for all participants and play an important role to cultivate the community in this research field.

General Co-Chairs
Hideaki Kuzuoka, University of Tsukuba, Japan
Hiroaki Ogata, University of Tokushima, Japan

Message from the Program Co-Chairs

After five International Conference on Collaboration Technologies, we now have the sixth edition (CollabTech 2012) in Sapporo, Hokkaido, Japan. The following topics on Collaboration Technologies will be discussed:

- Collaborative Learning
- Augmented Reality
- Collaborative Work
- Co-Dining Support
- Video Streaming and Creativity Support
- Understanding Communication and Work

This year, we received 40 submissions and assigned three reviewers per a full paper or two reviewers per a short or poster paper. As a result, we will have 17 full papers, 10 short papers, and 6 poster papers for presentation. The acceptance rate of full papers is 69%. The accepted papers represent 8 countries from all over the world, reflecting the international recognition of CollabTech 2012.

Without our distinguished program committee members, we could not have achieved our high standard reviews. We truly appreciate their devotion. Finally, we hope that these proceedings will serve as a direction for future researchers in this rapidly evolving field.

Program Co-Chairs
Takaya Yuizono, Japan Advanced Institute of Science and Technology, Japan
Kin-ya Fujita, Tokyo University of Agriculture and Technology, Japan
Yoshimichi Watanabe, University of Yamanashi, Japan

Organizing Committee

General co-chairs
Hideaki Kuzuoka, *University of Tsukuba, Japan*
Hiroaki Ogata, *University of Tokushima, Japan*

Program co-chairs
Takaya Yuizono, *Japan Advanced Institute of Science and Technology, Japan*
Kin-ya Fujita, *Tokyo University of Agriculture and Technology, Japan*
Yoshimichi Watanabe, *University of Yamanashi, Japan*

Financial co-chairs
Nobutaka Kawaguchi, *Hitachi, Ltd., Japan*
Takahiro Tanaka, *Tokyo University of Agriculture and Technology, Japan*
Kei Utsugi, *Hitachi, Ltd., Japan*

Publicity co-chairs
Hideaki Kanai, *Japan Advanced Institute of Science and Technology, Japan*
Momoko Nakatani, *NTT Cyber Solutions Laboratories, Japan*
Takefumi Ogawa, *The University of Tokyo, Japan*

Local arrangements co-chairs
Hidetoshi Nonaka, *Hokkaido University, Japan*
Hidekazu Sakagami, *NEC Corp., Japan*
Takeshi Muto, *Aoyama Gakuin University, Japan*
Kazuyuki Iso, *NTT West Corp., Japan*
Terunobu Kume, *Fujitsu Laboratories Ltd., Japan*
Atsuo Hazeyama, *Tokyo Gakugei University, Japan*
Hironori Egi, *Tokyo University of Agriculture and Technology, Japan*

Publication co-chairs
Masaya Okada, *Shizuoka University, Japan*
Naomi Yamashita, *NTT Communication Science Laboratories, Japan*
Hidekazu Shiozawa, *Tamagawa University, Japan*

Registration chair
Sougo Tsuboi, *Toshiba, Corp., Japan*

Secretaries
Yutaka Ishii, *Okayama Prefectural University, Japan*
Tomoo Inoue, *University of Tsukuba, Japan*

Steering committee
Ken-ichi Okada, *Keio University, Japan*
Jun Munemori, W*akayama University, Japan*
Minoru Kobayashi, *NTT Cyber Solutions Laboratories, Japan*

International advisory board
Gwo-Dong Chen, *National Central University, Taiwan*
Saul Greenburg, *University of Calgary, Canada*
Jonathan Grudin, *Microsoft Research, USA*
Gerhard Fischer, *University of Colorado at Boulder, USA*
Susan Fussel, *Cornell University, USA*
Ulrich Hoppe, *University of Duisburg-Essen, Germany*
Dongman Lee, *Korea Advanced Institute of Science and Technology, Korea*
Marcelo Milrad, *Linnaeus University, Sweden*
Volker Wulf, *University of Siegen, Germany*

Technical Program Committee

Program Co-chairs

Takaya Yuizono, *Japan Advanced Institute of Science and Technology, Japan*
Kinya Fujita, *Tokyo University of Agriculture and Technology, Japan*
Yoshimichi Watanabe, *University of Yamanashi, Japan*

Members

Yuichi Bannai, *Kanagawa Institute of Technology, Japan*
Hironori Egi, *Tokyo University of Agriculture and Technology, Japan*
Atsuo Hazeyama, *Tokyo Gakugei University, Japan*
Satoshi Ichimura, *Tokyo University of Technology, Japan*
Tomoo Inoue, *University of Tsukuba, Japan*
Yutaka Ishii, *Okayama Prefectural University, Japan*
Kazuyuki Iso, *NTT West Corp., Japan*
Qun Jin, Waseda *University, Japan*
HyungSeok Kim, *Konkuk University, Korea*
Jee-In Kim, Konkuk *University, Korea*
JongWon Kim, *Gwangju Institute of Science and Technology, Korea*
Tomohiro Kokogawa, *NTT Service Integration Laboratories, Japan*
Itaru Kuramoto, *Kyoto Institute of Technology, Japan*
Takeshi Kurata, *National Institute of Advanced Industrial Science and Technology, Japan*
Wim Lamotte, *Hasselt University, Belgium*
Jong Weon Lee, *Sejong University, Korea*
Hideyuki Nakanishi, *Osaka University, Japan*
Momoko Nakatani, *NTT Cyber Solutions Laboratories, Japan*
Takahiko Nomura, *Fuji Xerox Co., Ltd., Japan*
Takefumi Ogawa, *The University of Tokyo, Japan*
Masaya Okada, *Shizuoka University, Japan*
Masayuki Okamoto, *Toshiba Corp., Japan*
Masaki Omata, *University of Yamanashi, Japan*
Tetsuo Ono, *Hokkaido University, Japan*
Nobuchika Sakata, *Osaka Univerisity, Japan*
Yoshiaki Seki, *NTT Corp., Japan*
Hidekazu Shiozawa, *Tamagawa University, Japan*
Shin Takahashi, *University of Tsukuba, Japan*
Masahiro Takatsuka, *The University of Sydney, Australia*
Takahiro Tanaka, *Tokyo University of Agriculture and Technology, Japan*
Koji Tsukada, *Wakayama University, Japan*
Takanori Ugai, *Fujitsu Laboratories Ltd., Japan*
Kei Utsugi, *Hitachi, Ltd., Japan*
Michiya Yamamoto, *Kwansei Gakuin University, Japan*
Tomohito Yamamoto, *Kanazawa Institute of Technology, Japan*
Naofumi Yoshida, *Komazawa University, Japan*
Takashi Yoshino, *Wakayama University, Japan*

Table of Contents

Keynote Speech

Multi Modal Sensory Human Communication in the Internet Society
Adrian David Cheok 1

Session I: Collaborative Learning I

Supporting Daily Reflection for Ubiquitous Learning Log Using SenseCam
Bin Hou, Hiroaki Ogata, Mengmeng Li and Noriko Uosaki 2

4D Sandbox-MMORPG for Cooperative Learning in the Historical Context (short)
Shun-Cian Jheng, Ju-Ling Shih and Yen-Jen Wang 8

The Creation of A Massive Multiplayer Online Adventure Game for Cooperative Learning (short)
Yi-Han Wang, Yen-Jen Wang and Ju-Ling Shih 12

Session II: Video Streaming and Creativity Support

A Streaming Video Modification Method for Improving Visibility of the Content in the Video
Katsuhiko Kaji and Nobuo Kawaguchi 16

An Experimental Live Streaming of an Ice Hockey Game with Enhancement of Mutual Awareness (short)
Toshihiko Izumi, Hiroyuki Tarumi, Erina Kagawa, Rihito Yaegashi and Toshihiro Hayashi 22

The Effect of Using Photographs in Idea Generation Support System
Tomohiro Kokogawa, Yuji Maeda, Takahiro Matsui, Junko Itou and Jun Munemori 26

Basic Research on Time Series of Idea Generation for Reducing Idea-Creation Time (short)
Hideki Goromaru, Tomohiro Kokogawa, Takaya Yuizono, Takayuki Higashi, Junko Itou and Jun Munemori 32

Session III: Co-Dining Support

Development of KIZUNA System to Support Time-Shifted Co-Dining
Mamoun Nawahdah and Tomoo Inoue 36

Automatic Dish Recommendation System for People Dining Together: The Group FDT
Junshan Hu, Yuichiro Otsuka and Tomoo Inoue 42

GiantCutlery: A Dining Table-Talk Tool that Brings Out Mutual-Aid Interactions among Tablemates around Large Platters (short)
Kanayo Ogura, Yuta Tanaka and Kazushi Nishimoto 48

Session IV: Collaborative Learning II

Mobile Collaborative Learning and Cognitive Style Grouping
Li-Ping Chang, Pei-Ren Huang and Sherry Y. Chen 52

The Design of Shared Display Groupware for Supporting Interdisciplinary Collabo-rative Learning
Chen-Wei Chung, Yunhan Lai, Chen-Chung Liu and Shu-Yuan Tao 58

Formal and Informal Collaborative Learning in 3D Virtual Campuses
Mikhail Fominykh, Ekaterina Prasolova-Førland and Peter Leong 64

Designing Collaborative Learning Environments for Architecture, Engineering and Construction (AEC) Students (short)
Caroline T.W. Chan and Willy Sher 70

Session V: Understanding Communication and Work

The Measurement of Dialogue: From a Case Study of the Workshop Using World Cafe as a Collective Dialogue Method
Masamichi Takahashi, Keiichi Nemoto, Naoki Hayashi and Ryoji Horita 74

User Interruptibility Estimation based on Focused Application Switching
Takahiro Tanaka and Kinya Fujita 80

A System for Breaking Poor Posture in Performing VDT Tasks Using Pseudo-Negative Effects Associated with User Actions (short)
Mariko Kikugawa and Hideaki Kanai 86

Supporting Context Based Chats for Enterprise Use (short)
Tanuj Shah and Joyce Ohgi 90

Session VI: Augmented Reality

Collimation Using Transparent Projection Screen for Augmented Environment HUDs
Divya Udayan J, Hyungseok Kim and Mu Wook Pyeon 94

Analyzing Interactions between a Pair Out Together Real and Virtual
Ching-Tzun Chang, Shin Takahashi and Jiro Tanaka 100

Introducing Gestural Operation of the Viewpoint in a 3D Virtual Space of a Multiple Perspectives System
Kasumi Tarukawa, Tomoo Inoue and Ken-ichi Okada 106

Session VII: Augmented Reality and Collaborative Learning

Method of Displaying Injured Person Information with Augmented Reality for Electronic Triage Training
Yoshiaki Ando, Yuki Takahashi and Ken-Ichi Okada 113

System for Peer Review by Relative Evaluation in Group Learning (short)
Takayuki Watabe and Yoshinori Miyazaki 119

A Collaborative Learning Support System for Software Engineering Education (short)
Longming Zhang and Atsuo Hazeyama 123

Session VIII: Collaborative Work

Cybersecurity Incident Management through Collaborative Security Log Analysis System
Hiroshi Kure, Chifumi Nishioka and Ken-ichi Okada 127

Implementing the Coupled Objects paradigm for Supporting Collaborative Applications Programming with HTML5
Nelson Baloian, Jonathan Frez and Gustavo Zurita 133

A Study of Laptop with Projector Camera System for Collaboration
Takahiro Suzuki, Nobuchika Sakata, Daiki Matsuda and Shogo Nishida 139

Poster Session

Development of a Massively Multiplayer Online Role–Playing Game for English Learning
Lu Ting Liu, Jie Chi Yang and Ben Gao Huang 145
A Proposal of Video Communication System in Which Talker's Avatar Is Superimposed for a Virtual Face-to-Face Scene
Yutaka Ishii, Tomohiro Takada and Tomio Watanabe 147
A Context-aware Multimodal Interface for Mobile Learning
Mengmeng Li, Hiroaki Ogata, Bin Hou and Noriko Uosaki 149
Development of a Travel Assistant System Using Google Maps and a Pictograph Chat
Jun Munemori, Motohide Terao and Junko Itou 151
Design of GUNGEN-SPIRAL III for Laboratory Management
Takaya Yuizono, Jiafu Zhou and Jun Munemori 153
Development of Group Discussion Support System Based on Brain Writing Method
Masashi Okubo, Satoshi Tanaka and Takuhiro Fujii 155

CollabTech 2012
Sponsors

Support Center for Advanced Telecommunications Technology Research
(SCAT)

HITACHI
Inspire the Next

Hitachi, Ltd.

ISBN 978-4-915256-86-8 C3804