Program
The First International Symposium on Cyber Worlds

Place of conference: Sky Hall, BT (Boissonade Tower) 26th floor, Hosei University, Ichigaya, Tokyo, Japan

November 6 (Thursday)

10:00 – 13:00   Tutorial I – V. Savchenko: *Shape Modeling, Computer Graphics and Animation by Means of Radial Basis Functions*
14:00 – 17:00   Tutorial II – S. Liu: *Formal Engineering Methods for Software Development – An Introduction to SOFL*

November 7 (Thursday)

8:30 – 9:00   Registration
9:00 – 9:15   Welcome and Opening – Ohmori and Kunii
9:15 – 10:15   Keynote – Tetsuya Sato: *What can the World Simulator Impact on Humans?* (Chair: N. Koike)
10:15 – 10:30   Coffee Break
10:30 – 12:30   Parallel Sessions

Session A1: Parallel/Distributed Processing (Chair: S-L, Lee)

Data Redistribution Using MPI User-Defined Types
        S-W Bai and C-S Yang
Design and Implementation of a Leasing Service
        M. Aleksy and R. Gitzel
Efficient Data Compression Methods for Multi-dimensional Sparse Array Operations
        C-Y Lin, Y-C Chung and J-S Liu
Algorithms and Complexity for Weighted Hypergraph Embedding in a Cycle
        S-L Lee and H-J Ho

Session C1: Multimedia Retrieval and Synthesis (Chair: M. Hirakawa)

Content-based Video Retrieval using Mosaic Images
        M. Hirakawa, K. Uchida and A. Yoshitaka
Study of Relative Effectiveness of Features in Content-Based Image Retrievals
        S.R. Subramanya, Jui-Che Teng and Yongjian Fu
A Stitching Algorithm of Still Pictures with Camera Translation
        Y. Linghong and M. Hirakawa
A Hybrid Method for Estimating the Euclidean Distance between Two Vectors
        Chin-Chen Chang, Po-Wen Lu and Ju-Yuan Hsiao
Robotic Spatial Sound Localization and Its 3-D Sound Human Interface
        J. Huang, K. Kume, A. Saji, M. Nishihashi, T. Watanabe and W.L. Martens

Session C2: Multimedia Presentation and Protection (Chair: Leonard Barolli)

An Adaptive Architecture for Multi-stream Authoring and Presentations in Distributed Networks

Chung-Ming Huang, Pei-Chuan Liu and Tz-Heng Hsu
Adaptive Content Model for Multimedia Presentation
Lawrence Y. Deng and Timothy K. Shih
An Image Copyright Protection Scheme Based on Torus Automorphism
Chin-Chen Chang, Ju-Yuan Hsiao and Chi-Lung Chiang
Watermark in Color Image
Ren-Junn Hwang and Chuan-Ho Kao
Sharing a Secret Gray Image in Multiple Images
C-C Chang and T-X Yu

Session D1: Topological Modeling (Chair: S. Yukita)

Presenting Methods for Unraveling the First Two Regular 4D Polytopes (4D simplex and the Hypercube)
Antonio Aguilera Ramirez and Ricardo Perez Aguila
Shape Modeling Using Cellular Structured Spaces
Kenji Ohmori and Wona Lee
Design Patterns For Topological Modeling
Shuichi Yukita

12:30 – 1:30   Lunch Time
13:30 – 15:45   Invited Talks (Chair: J. Ma)

Process of Software Evolution
Tetsuo Tamai
Virtual Rooms for Building Complex Interactive Learning Environments
Marion Hagler
Towards automatic segmentation in reverse engineering
Guido Brunnett

15:45 – 16:00   Coffee Break
16:00 – 17:30   Parallel Sessions

Session A2: Parallel/Distributed Architectures (Chair: Y. Li)

Reliable Distributed Search Engine based on Multiple Meta Servers
N. Sato, M. Udagawa, Y. Sakai and H. Mori
From Dualcube to Metacube: high-performance and low-degree alternatives for hypercube
Y. Li, S. Peng and W. Chu
Performance Analysis of SVD Algorithm on the Trident Processor
M. Soliman and S. Sedukhin

Session C3: Networking and Information Security (Chair: C-K Wu)

Vertically Stacked Benes Networks for Crosstalk-free Permutation
X. Jiang, H. Shen, Md. M-R Khandker and S. Horiguchi
Internet Voting: Concerns and Solutions
C-K Wu and Ramesh Sankaranarayana
The General Autocorrelation and Its Application
Baodian Wei, Dongsu Liu and Xinmei Wang

Key Exchange Protocols for Multiparty Communication
        C-C Chang and C-W Chan
Cryptanalysis of the WD Public-Key Cryptosystem
        H-F Huang and C-C Chang

Session C4: Network Routing and QoS Control (Chair: K.M. Sim)

Multiple ANT-Colony Opitimization for Network Routing
        Kwang Mong Sim and Weng Hong Sun
QoS Control in Group Communication
        Takuya Tojo and Makoto Takizawa
A New QoS Routing Approach for Multimedia Applications based on Genetic Algorithms
        L. Barolli, A. Koyama, H. Sawada, T. Suganuma and N. Shiratori
Synchronous Parallel GA with Nearly Zero Sequential Computation
        Nobuhiro Okamoto and Qiangfu Zhao

Session D2: Shape Transformations (Chair: G. Brunnett)

Topological Morphing Using Reeb Graphs
        P. Kanongchaiyos, T. Nishita, Y. Shinagawa, and T.L. Kunii
Free-Form Deformation with Automatically Generated Multiresolution Lattices
        Y. Ono, B-Y Chen, T. Nishita and J. Feng,
A Practical Image Retouching Method
        V. Savchenko, N. Kojekine, and H. Unno
Mesh Median Filter For Smoothing 3-D Polygonal Surfaces
        H. Yagou, A. Belyaevy, and D. Wei

18:30 – 20:00   **Reception**

November 8 (Friday)

8:30 – 9:00   Registration
9:00 – 10:15   Keynote – Tosiyasu L. Kunii: *Cyber Graphics* (Chair: V. Savchenko)
10:15 – 10:30   Coffee Break
10:30 – 12: 30   Parallel Sessions

Session B1: Software Engineering (Chair: S. Liu)

A Unified Framework for Software Development
        I. Ho, Z. Komiya, B. Pham, S. Sayavong and K. Yana
A Simulation Approach to Verification and Validation of Formal Specifications
        S. Liu
Strategies to Suppress Productivity Decrease with Unknown Issues under Interactive Development Process
        T. Fujii, Y. Kombayashi
Database Semantics Representation for Natural Language Access
        I-S Kang, J-H Bae and J-H Lee

Session C5: E-Commerce and E-Education (Chair: A. Hazeyama)

An Agent Based e-marketplace over e-business
> Y-H Wang, W-N Wang, C-A Wang and A-C Cheng

An E-shopping System with Different Negotiation Models
> H. Ouchiyama, T.Yamazaki and R. Huang

Design of an Effective Learning Method SQ3R Based Distance Learning System
> G. Zhang, Z. Cheng, T. Huang, A. He and A. Koyama

Web-based Software Engineering Education Environment Supporting Collaboration between the Teacher Side and the Student Groups
> Atsuo Hazeyama

University Software Education Matched to Social Requests
> T. Yamaura and A. K. Onoma

Session C6: Wireless Internet Service and P2P System (Chair: Timothy K. Shih)

An Agent Based Campus Information Providing System for Cellular Phone
> A. Koyama, N. Takayama, L. Barolli, Z. Cheng and N. Kamibayashi

Mobile Distributed Web Server System
> Jason C. Hung

A Push-Type Groupware System to Facilitate Small Group Collaboration
> Roman Shtykh and Qun Jin

MMS PDA Client and KIOSK Using a P2P Model
> Nitin Mittal and Kin Choong Yow

Session D3: CG and Computer Art Applications (Chair: A. Sourin)

TRLE - An Efficient Data Compression Scheme for Image Composition of Parallel Volume Rendering Systems
> C-F Lin, Y-C Chung, and D-L Yang

A Real-Time Configurable Shader Based on Lookup Tables
> E. Ohbuchi and H. Unno

Possible Techniques for Three Dimensional Hatching
> V. Savchenko, H. Unno, and N. Kojekine

Interactive Function-based Artistic Shape Modeling
> K. Levinski and A. Sourin

12:30 – 1:30   Lunch Time
13:30 – 15:10   Invited Talks (Chair: K. Ohmori)

Knowledge Management and Cyberworlds
> Peter   Eklund,

Distance Education Technologies: Current Trends and Software Systems
> Timothy K. Shih

15:10 – 15:30   Coffee Break
15:30 – 17:30   Parallel Sessions

Session B2: Intelligent Computing (Chair: Y. Sato)

Thai OCR Error Correction Using Genetic Algorithm
> K. Somguntar, K. Siriboon and B. Kruatrachue

HMM Topology Selection for On-Line Thai Handwritten Recognition

        K. Siriboon, A. Jirayusakul and B. Kruatrachue

Using the RNN to Develop a Web-Based Pattern Recognition System for the Pattern Search of Components Database

        S-J Hsiao, S-C Ou, K-C Fan and W-T Sung

Result Integration in a Meta Web Search Engine

        B Xu, W. Zhang and H Yang

Session C7: XML Technology and Web System Model (Chair: S. Nakajima)

XML Data Dictionary for Multidimensional Metadata Modeling

        Peng Xu

XML vs. Object-Oriented XML: Motivations, Applications, and Performance Evaluation

        Hon Chung MAK, Edmund, Shermann S.M. Chan and Qing Li

Verification of Web Service Flows with Model-Checking Techniques

        Shin Nakajima

A Cellular Design System for Soft- and Varied Sized- Objects

        Kazuteru Matsumoto and Tosiyasu L. Kunii

Session C8: Advanced Web Application and Tool (Chair: Akio Koyama)

HLPM - A High Level Protocol Monitoring Tool for Education

        A. Imai and S. Yukita

OntoRama: Browsing RDF Ontologies Using a Hyperbolic Browser

        Peter Eklund, Steve Green and Natalyia Roberts

Extensible Requirements Patterns of Web Application for Efficient Web Application Development

        Romi Satria Wahono and Jingde Cheng

A Novel Datacube Model Supporting Interactive Web-log Mining

        Tadashi Ohmori, Yuichi Tsutatani and Mamoru Hoshi

Function-based 3D Web Visualization

        Lai Feng Min and Alexei Sourin

Session D4: VR Applications (Chair: M. Cohen)

Autonomous and Robust Navigation for Simulated Humanoid Characters in Virtual Environments

        T. Frohlich and D. Kullmann

A Hierarchically Structured Constraint-based Data Model for Solid Modelling in a Virtual Reality Environment

        Y. Zhong, Wolfgang Mueller-Wittig, and W. Ma

Beyond Flat Panning and Zooming: Dolly-Enhanced SQTVR

        Noor A. Bolhassan, W. Martens, and M. Cohen

Cybernarium Days 2002 - A public experience of Virtual and Augmented Worlds

        J. Behr, P. Eschler, T. Fröhlich, C. Knöpfle, B. Lutz, S. Müller, and M. Roth

18:00 – 20:00   **Banquet**