

**2022 23rd ACIS International
Summer Virtual Conference on
Software Engineering, Artificial
Intelligence, Networking and
Parallel/Distributed Computing
(SNPD-Summer 2022)**

**Kyoto City, Japan
4-6 July 2022**



**IEEE Catalog Number: CFP22DL7-POD
ISBN: 979-8-3503-9638-6**

**Copyright © 2022 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP22DL7-POD
ISBN (Print-On-Demand):	979-8-3503-9638-6
ISBN (Online):	979-8-3503-9637-9

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

2022 23rd ACIS International Summer Virtual Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing (SNPD-Summer) **SNPD-Summer 2022**

Table of Contents

Message from the the General Chair	ix
Message from the Program Chair	x
Message from the Conference Chair	xi
Organizing Committee	xii
Ketnotes	xiv

Regular Session

TETRIS: Automatic UAF Exploit Generation by Manipulating Layout Based on Reactivated Paths.....	1
<i>Bin Zhang (National University of Defense Technology, China) and Fenglei Deng (National University of Defense Technology, China)</i>	
Artificial Neural Network for Processing Fingerprint Image Noise	9
<i>Ke Han (Institute of Forensic Science Ministry of Public Security China, China)</i>	
Facial Expression Intensity Estimation Considering Change Characteristic of Facial Feature Values for Each Facial Expression	15
<i>Takanori Shiomi (Kyoto Institute of Technology, Japan), Hiroki Nomiya (Kyoto Institute of Technology, Japan), and Teruhisa Hochin (Kyoto Institute of Technology, Japan)</i>	
Developing a Gamification Method Based on Motivation Subscales for Lifelogging Applications	22
<i>Aoi Nagatani (Kobe University Rokkodai-cho 1-1, Japan), Sinan Chen (Kobe University Rokkodai-cho 1-1, Japan), and Masahide Nakamura (Riken AIP 1-4-1 Nihon-bashi, Japan)</i>	
Preliminary Study of Reasoning Existing Projects' Descriptions Based on Classname Word Elements	30
<i>Kohei Terakawa (Kobe University, Japan), Sinan Chen (Kobe University, Japan), and Masahide Nakamura (RIKEN AIP, Japan)</i>	

Speed-up Single Shot Detector on GPU with CUDA	36
<i>Chenyu Wang (Tokyo Institute of Technology & National Institute of Advanced Industrial Science and Technology, Japan), Toshi Endo (Tokyo Institute of Technology, Japan), Takahiro Hirofuchi (National Institute of Advanced Industrial Science and Technology, Japan), and Tsutomu Ikegami (National Institute of Advanced Industrial Science and Technology, Japan)</i>	
Construction and Evaluation of a Speech Emotion Classifier using LSTM	42
<i>Yuki Izumi (Kyoto Institute of Technology Kyoto, Japan), Hiroki Nomiya (Faculty of Information and Human Sciences Kyoto Institute of Technology Kyoto, Japan), and Teruhisa Rochin (Faculty of Information and Human Sciences Kyoto Institute of Technology Kyoto, Japan)</i>	
Study of Service to Assist Platform Deployment of Heterogeneous IoT	48
<i>Tomoro Nakahashi (Kobe University, Japan), Sinan Chen (Kobe University, Japan), and Masahide Nakamura (RIKEN Center for Advanced Intelligence Project, Japan)</i>	
Concurrency Control Program Generation in Genetic Programming Considering Depth of the Program Tree	56
<i>Toshiyuki Fukui (Graduate School of Science and Technology, Kyoto Institute of Technology, Japan) and Teruhisa Hochin (Faculty of Information and Human Sciences, Kyoto Institute of Technology, Japan)</i>	

Special Session 1: Organization of Innovative Computer System for Large-Scale and Flexible Computing

Reconfiguration Cost for Reconfigurable Computing Architectures	62
<i>Shigeyuki Takano (Keio University, Japan) and Hideharu Amano (Keio University, Japan)</i>	
Assembly Code Translation from ARM64 to RISC-V	68
<i>Tatsuya Tsuchiya (Utsunomiya University, Japan), Kanemitsu Ootsu (Utsunomiya University, Japan), Takashi Yokota (Utsunomiya University, Japan), and Shun Kojima (Utsunomiya University, Japan)</i>	
Parallel Binary Search Tree Construction Inspired by Thread-Level Speculation	74
<i>Hiroaki Hirata (Faculty of information and human sciences Kyoto Institute of Technology, Japan) and Atsushi Nunome (Faculty of information and human sciences Kyoto Institute of Technology, Japan)</i>	
Comparison of Reinforcement Learning in Game AI	82
<i>Jintaro Nogae (Utsunomiya University, Japan), Kanemitsu Ootsu (Utsunomiya University, Japan), Takashi Yokota (Utsunomiya University, Japan), and Shun Kojima (Utsunomiya University, Japan)</i>	
Enhancing the Performance of an Autonomous Distributed Storage System in a Large-Scale Network	87
<i>Atsushi Nunome (Kyoto Institute of Technology, Japan) and Hiroaki Hirata (Kyoto Institute of Technology, Japan)</i>	

An Implementation of Interactive Simulation on the Sensable Simulation System:Scube – Case Study I	95
<i>Ryohei Horiguchi (University of Fukui, Japan), Satoshi Mizutani (University of Fukui, Japan), Shinji Fukuma (University of Fukui, Japan), and Shin-ichiro Mori (University of Fukui, Japan)</i>	
Data Structures for Routing Table of the Distributed Key-Value Store Based on Order Preserving Linear Hashing and Skip Graph with the Load Balancing Method	101
<i>Ken Higuchi (University of Fukui, Japan), Ami Miyazaki (University of Fukui, Japan), Hasegawa Kenya (University of Fukui, Japan), and Tatsuo Tsuji (University of Fukui, Japan)</i>	

Special Session 2: Analysis, Evaluation, and Usage of Web Information, System Behaviors, and Human Actions

Image Inpainting using Automatic Structure Propagation with Auxiliary Line Construction	107
<i>Yuto Urano (Kyoto Institute of Technology, Japan), Irawati Nurmala Sari (Kyoto Institute of Technology, Japan), and Weiwei Du (Institute of Technology, Japan)</i>	
Edge-Enhanced GAN with Vanishing Points for Image Inpainting	113
<i>Kei Masaoka (Kyoto Institute of Technology, Japan), Irawati Nurmala Sari (Kyoto Institute of Technology, Japan), and Weiwei Du (Kyoto Institute of Technology, Japan)</i>	
Automatic Detection of Microaneurysms in Fundus Images	119
<i>Shuhei Yamada (Kyoto Institute of Technology, Japan), Jesus Eduardo Ochoa Astorga (Kyoto Institute of Technology, Japan), Weiwei Du (Information and Human Science Kyoto Institute of Technology, Japan), and Yahui Peng (Beijing Jiaotong University, China)</i>	
Coronal Curved Planar Reformation for Vertebra Localization in Pelvic Radiotherapy CT Images	125
<i>Shuang Hou (Beijing Jiaotong University, China), Xuzhi Zhao (Beijing Jiaotong University, China), Yi Du (Peking University Cancer Hospital & Institute, China), Haizhen Yue (Peking University Cancer Hospital & Institute, China), Weiwei Du (Kyoto Institute of Technology, Japan), and Yahui Peng (Beijing Jiaotong University, China)</i>	
Conversation Topic Collection and Selection Support System using Context/Physiological Information	129
<i>Keiko Yamamoto (Kyoto Institute of Technology, Japan), Shunya Furuta (Kyoto Institute of Technology, Japan), and Yoshihiro Tsujino (Kyoto Institute of Technology, Japan)</i>	
Application of 2-Gram to English Q&A Statements to Obtain Factor Scores	134
<i>Yuya Yokoyama (Kyoto Prefectural University, Japan), Teruhisa Hochin (Kyoto Institute of Technology, Japan), and Hiroki Nomiya (Kyoto Institute of Technology, Japan)</i>	
ARGO: Projects' Time-Series Data Fetching and Visualizing Tool for GitHub	141
<i>Kaito Kaide (Kyoto Sangyo University, Japan) and Haruaki Tamada (Kyoto Sangyo University, Japan)</i>	

Special Session 3: Special Session 3: Wellbeing and Affective Engineering

Effects of Looking Back on Smartphone Photography on Positive Emotions	148
<i>Akihiro Ogino (Kyoto Sangyo University, Japan) and Reina Sato (Kyoto Sangyo University, Japan)</i>	
Multimedia Positive Computing Through Transition in Affective and Impression Spaces	154
<i>Teruhisa Hochin (Faculty of Information and Human Sciences Kyoto Institute of Technology, Japan)</i>	
Investigation of Musical Factors Affecting Walking Speed with the Same Tempo	160
<i>Makoto Fukumoto (Fukuoka Institute of Technology, Japan) and Sakura Ichikawa (Fukuoka Institute of Technology, Japan)</i>	
Adjustment of Interval of Voices in Cognitive Shuffle Method by Body Movement Feedback with Binaural Sound	166
<i>Makoto Fukumoto (Fukuoka Institute of Technology, Japan) and Hirohisa Konishi (Fukuoka Institute of Technology, Japan)</i>	
Author Index	173