

①

出國報告（出國類別：參加國際交流研討會）

②

日本早稻田大學國際交流研討會(ISIPS
2014)參訪報告

③

服務機關：國立暨南國際大學電機系

姓名職稱：李佩君教授 (Prof.Pei-Jun Lee)

派赴國家：日本

出國期間：2014年11月11日~11月16日

報告日期：2015年5月18日

摘要

此行主要是參加日本早稻田大學每年舉辦與簽有 MOU 的學校的學術交流研討會並安排了產業的參觀活動，參加的學校大多數是東南亞國家含中國、臺灣、韓國、馬來西亞及泰國。九州早稻田大學以電器學院為主，暨大的科技學院還未與九州早稻田大學簽訂 MOU，也期望這次的交流可以有機會與九州早稻田大學簽訂交流合約的機會。在會中交流了資訊、雲端、產業系統等，相關知識。也參觀 YASAKAWA 公司，該公司主要生產工業用機器人，也生產一些服務型機器人，因我對此領域很感興趣，據說該公司每個月可以生產 2000 多臺工業用機器人內外銷，是日本很重要的機器人製造廠。我也看到他們的機器人控制也做得很精密很智慧，令我佩服不已。他們還有一個機器人展覽館，展示一些人型及智慧型機器人，還有一個機器人打鼓團合。日本的機器人產業遠遠超過臺灣很多，深深覺得日本是值得臺灣學習的地方還很多。會中我也報告了 paper，可能是因為我們發表的論文是 3D 的研究，其研究室有關於 3D 內容的生成及硬體的實現，可用於不同的 3D display，大陸對這塊研究還是新興領域，好多大陸的老師與學生對我們的 paper 很感興趣，也很高興讓外面看到我們不錯的研究成果。基本上大家還是很肯定臺灣的教育，覺得臺灣的教授一般而言比較實在與認真，聽到他們的說法，蠻欣慰的。

目次：

摘要.....	2
報告內容.....	4
目的.....	4
過程.....	4
心得與建議	5
與會照片.....	6
附錄	
議程.....	7
會議主題.....	30
發表論文.....	31

1. 報告內容：

摘要：

此行主要是參加日本早稻田大學每年舉辦與簽有 MOU 的學校的學術交流研討會並安排了產業的參觀活動，參加的學校大多數是東南亞國家含中國、臺灣、韓國、馬來西亞及泰國。九州早稻田大學以電器學院為主，暨大的科技學院還未與九州早稻田大學簽訂 MOU，也期望這次的交流可以有機會與九州早稻田大學簽訂交流合約的機會。在會中交流了資訊、雲端、產業系統等，相關知識。也參觀 YASAKAWA 公司，該公司主要生產工業用機器人，也生產一些服務型機器人，因我對此領域很感興趣，據說該公司每個月可以生產 2000 多臺工業用機器人內外銷，是日本很重要的機器人製造廠。我也看到他們的機器人控制也做得很精密很智慧，令我佩服不已。他們還有一個機器人展覽館，展示一些人型及智慧型機器人，還有一個機器人打鼓團合。日本的機器人產業遠遠超過臺灣很多，深深覺得日本是值得臺灣學習的地方還很多。會中我也報告了 paper，可能是因為我們發表的論文是 3D 的研究，其研究室有關於 3D 內容的生成及硬體的實現，可用於不同的 3D display，大陸對這塊研究還是新興領域，好多大陸的老師與學生對我們的 paper 很感興趣，也很高興讓外面看到我們不錯的研究成果。基本上大家還是很肯定臺灣的教育，覺得臺灣的教授一般而言比較實在與認真，聽到他們的說法，蠻欣慰的。

目的：

此行主要是參加日本早稻田大學每年舉辦與簽有 MOU 的學校的學術交流研討會，會中安排與會學者發表自己的研究並安排了產業的參觀活動，參加的學校大多數是東南亞國家含中國、臺灣、韓國、馬來西亞及泰國。九州早稻田大學以電器學院為主，暨大的科技學院還未與九州早稻田大學簽訂 MOU，也期望這次的交流可以有機會與九州早稻田大學簽訂交流合約的機會。

過程：

11 月 11 日下午我們抵達福岡機場，碰到也是來參加的臺北科大蔡孟伸教授及成功大學楊宏澤教授，出關後搭早稻田的接駁車抵達旅館已天黑了。第二天(11/12)一大早，該校接我們到學校並舉辦了開幕式，並聽完兩個 keynote speech，主講者一為該校教授 Satoshi Goto (Waseda University, Japan)，另一個為韓國教授 (Chonnam National University, Korea)。在開幕式中，我也碰到幾位去年認識的幾位早稻田的教授寒暄了幾句。下午有幾個 sessions，大部分是大陸的學生報告，這次來訪許多大陸學生，大陸來訪的老師反而很少，不如去年的人數，據說是經費問題，今年早稻田只補助每個姊妹校一個老師名額，所以來訪的教師們變少了。我就早早回旅館做自己的事去了。

第三天(11/13)早上有兩個參觀行程，我選擇去參觀 YASAKAWA 公司，該公司主要生產工業用機器人，也生產一些服務型機器人，因我對此領域很感興趣，據說該公司每

個月可以生產 2000 多臺工業用機器人內外銷，是日本很重要的機器人製造廠。我也看到他們的機器人控制也做得很精密很智慧，令我佩服不已。他們還有一個機器人展覽館，展示一些人型及智慧型機器人，還有一個機器人打鼓團合。日本的機器人產業遠遠超過臺灣很多，深深覺得日本是值得臺灣學習的地方還很多。下午參加了一個 oral session，題目為 OS9: Community Computing and Robotic Interaction II，該 session 中有五篇文章發表，三篇來自中國南京大學與東南大學，另兩篇乃是早稻田的學生報告，其中他們發表了有關電腦通訊以及機器互動領域的相關知識，因每位同學都報得很快，本 session 提早結束了。接著是 poster session，也是我發表 paper 的 session，可能是因為我們發表的論文是 3D 的研究，大陸對這塊研究還是新興領域，好多大陸的老師與學生對我們的 paper 很感興趣，一直過來請教我問題，讓我幾乎無法停下來休息，但也很高興讓外面看到我們不錯的研究成果。在最後快收攤時還是需在會場走走看看別人做的東西，也問了幾個問題。跟大陸學生聊了很多，他們基本上還是很肯定臺灣的教育，覺得臺灣的教授一般而言比較實在與認真，聽到他們的說法，蠻欣慰的。Poster session 完畢後，我們就準備去參加晚宴了，本次晚宴在校內舉行，規模小但很溫馨，學生多教師少，吃的東西不多。其中主辦單位還邀請幾位外國大學代表上臺致詞，中央大學王文俊院長代表臺灣也說了幾分鐘話。晚宴中幾位臺灣到早稻田來攻讀學位或修雙學位的研究生，紛紛來跟我們幾個來自臺灣的教授打招呼，他們在異鄉看到故鄉的老師應該很親切吧!!

第四天(11/14)早上，我單獨去參訪了 Prof. Baba Takaaki 的實驗室，裡面有三個臺灣學生，七八位大陸學生，只有兩位日本學生，整個實驗室講中文可以通，日本學生反而成了少數民族，有點滑稽。Prof. Baba 的研究很多元，無線通訊、信號處理、移動系統大型積體電路等都有學生在做，主要是跟著計劃走，IPS 研究院的研究題目絕對是業界需要的，有應用價值的，這與一般大學注重學術研究較不一樣。

11/15 及 16 兩天是周末，我沒正式行程，只在福岡與博多兩個城市逛逛買買東西，16 日下午搭機返國，結束這次的早稻田大學交流之旅。

心得及建議：

論文發表部分因為我們發表的論文是 3D 的研究，大陸對這塊研究還是新興領域，好多大陸的老師與學生對我們的 paper 很感興趣，一直過來請教我問題，讓我幾乎無法停下來休息，但也很高興讓外面看到我們不錯的研究成果。在最後快收攤時還是需在會場走走看看別人做的東西，也問了幾個問題。跟大陸學生聊了很多，他們基本上還是很肯定臺灣的教育，覺得臺灣的教授一般而言比較實在與認真，聽到他們的說法，蠻欣慰的。建議教育部給予更多的獎勵及經費給優秀的教授們才能讓世界看到我們的努力，另外有鑑於大陸近幾年來一直挖角國內教授，也建議教育部該思考如何留住人才。

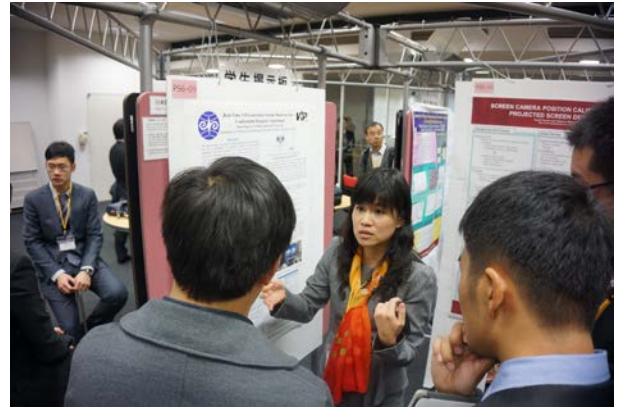
而在學術交流部分，日本跟臺灣一樣越來越少學生要念碩士班級博士班，因此教育需重新思考什麼才是學生所需，也許如 IPS 研究院的研究題目絕對是業界需要的，有應用價值的，才是大學生存的必要發展。

以下附上照片。

照片一：參觀 YASAKAWA 公司



照片二：我 poster session



照片三：會議 opening



附錄：

1.議程 (PROGRAM) (請參考 <http://www.waseda.jp/assoc-ics/2014/program.html>)
(螢光標出為本人報告論文的時間與論文資訊)

12 November (Wed)

09:00 - 09:30

Registration

Media Center 1F Tele-Lecture Room 1 (KSRP)

09:00 - 09:45

Opening Ceremony

Media Center 1F Tele-Lecture Room 1 (KSRP)

Chair: Prof. Yves LEPAGE (Waseda University, Japan)

Opening Address

Prof. Osamu YOSHIE (Dean of Graduate School of Information, Production and Systems,
Waseda University, Japan)

Greeting from Kitakyushu Foundation for the Advancement of Industry Science and
Technology (FAIS)

Dr. Toyoki KUNITAKE (President of FAIS)

09:50 - 10:30

Keynote Speech

Media Center 1F Tele-Lecture Room 1 (KSRP)

Session Chair: Prof. Yves LEPAGE (Waseda University, Japan)

“Low Electric Power Design for Video Processing”

Prof. Satoshi Goto (Waseda University, Japan)

10:40 - 11:20

Invited Talk

Media Center 1F Tele-Lecture Room 1 (KSRP)

Session Chair: Prof. Hee-Hyol Lee (Waseda University, Japan)

“Computational Intelligence Approach in Biochemical Measurement: An Example of Error Correction for Glucose Measurement”

Prof. Yonggwon Won(Chonnam National University, Korea)

11:20 ? 11:30

Schedule Overview

Media Center 1F Tele-Lecture Room 1 (KSRP)

Chair: Prof. Shigeru Fujimura (Waseda University, Japan)

11:30 - 13:30

Lunch

Student Lobby and Lecture Room S104 (IPS)

11:30 - 13:30

Japanese Tea Party

Gallery (IPS)

Please feel free to participate in it and enjoy the flavor of Japanese culture!

13:30 - 15:30

Oral Sessions

Oral Session 1: Optimization and Simulation

Lecture Room S153 (IPS)

Session Chair: Prof. Yiping Feng (Zhejiang University, China)

OS1-1: Coupling evolutionary algorithm with time control for the JIT scheduling problems

Junru Chen, Wei Weng, Gang Rong and Shigeru Fujimura (Waseda University, Japan)

OS1-2: USING A WORKFLOW MODEL WITH ICONS TO MANAGE EMERGENCY PLANS

Shuang Li, Cheng Li, Yiping Feng, Wei Weng and Gang Rong (Zhejiang University, China)

OS1-3: Multi-agent method based on bottleneck strategy for solving Job Shop Scheduling

Ruixue Wu, Wei Weng, Gang Rong and Shigeru Fujimura (Waseda University, Japan)

OS1-4: A detailed MILP optimization model for steam power system considering economic and environmental aspects

Pengfei Zhang, Hao Zhao, Wei Weng, Yiping Feng and Gang Rong (Zhejiang University, China)

OS1-5: canceled

Oral Session 2: Data Engineering for Information Sharing

Lecture Room S154 (IPS)

Session Chair: Prof. Juggapong Natwichai (Chiang Mai University, Thailand)

OS2-1: Two-step Recursive Least Squares Temporal Difference with Gradient Correction

Dazi Li, Tianheng Song and Qibing Jin (Beijing University of Chemical Technology, China)

OS2-2: Decentralized Subchannel Allocation Strategy for Interference Management in Femtocell Networks

Shashi Shah and Somsak Kittipiyakul (Sirindhorn International Institute of Technology, Thailand)

OS2-3: A FHE public key compression scheme based on pairwise multiplication of PK element

Zhanni Wu, Yuyang Wang and Liquan Chen (Southeast University, China)

OS2-4: Finding Co-occurring Topics in Wikipedia Article Segments

Renzhi Wang, Jianmin Wu and Mizuho Iwaihara (Waseda University, Japan)

OS2-5: An improved coding unit size decision algorithm for HEVC intra coding

Yan Li and Song Xiao (Xidian University, China)

OS2-6: Big Data in Healthcare: A Brief Review

Juggapong Natwichai (Chiang Mai University, Thailand)

Oral Session 3: Community Computing and Robotic Interaction I

Lecture Room S103 (IPS)

Session Chair: Prof. Chaodit Aswakul (Chulalongkorn University, Thailand)

OS3-1: Improvement of IDAT and new application development

Chuankai Dai and Takafumi Matsumaru (Waseda University, Japan)

OS3-2: SAKSHAR: An Image-projective Desktop Varnamala Trainer (IDVT) for Interactive

Learning of Alphabets

R. P. Joshi, R. A. Bobby, S.K. Saha and T. Matsumaru (Indian Institute of Technology Delhi, India)

OS3-3: Multi-finger Touch Interface based on ToF camera and webcam

Lixing Zhang and Takafumi Matsumaru (Waseda University, Japan)

OS3-4: A Mechanic Arm and Hand Control System Design Based on Infrared and Color Image Sensors

Rui Zhu, Minjun Wu, Hongsheng Jin and Yongming Tang (Southeast University, China)

OS3-5: canceled

Oral Session 4: Estimation and Control

Lecture Room S105 (IPS)

Session Chair: Prof. Jin Young Kim (Chonnam National University, Korea)

OS4-1: An Automated Driving Positioning based on Bayesian Method

Yukun Zhang and Hee-hyol Lee (Waseda University, Japan)

OS4-2: Human Detection And Tracking Under Complex Poses Using Poselet With Particle Filters

Ngoc Nam Bui, Thuong Khanh Tran, Jin Young Kim and The Bao Pham (Chonnam National University, Korea)

OS4-3: Decouple PID Control of Ultra-Compact Binary Power Generation Plant

Kun-Young Han and Hee-Hyol Lee (Waseda University, Japan)

OS4-4: Precise Position Control of Shoes-upper for Screen Printing Machine Using Image Processing Techniques

Trong Hieu Bui and Thanh Huy Phung (Ho Chi Minh City University of Technology, Viet Nam)

Oral Session 5: Planning and Decision Support

Lecture Room S106 (IPS)

Session Chair: Prof. Bishakh Bhattacharya (Indian Institute of Technology Kanpur, India)

OS5-1: Solving Multi-mode Project Scheduling Problem with Uncertainty using Hybrid Markov Network EDA

Jing Tian and Tomohiro Murata (Waseda University, Japan)

OS5-2: A Decision Support Approach for Supplier Selection on a Construction Industry Public Service Platform

Yiwei Guo and Hao Wen Lin (Harbin Institute of Technology Shenzhen Graduate School, China)

OS5-3: Adaptation of Differential Evolution for Gas Distribution Network Optimization

Evgeny Malamura and Tomohiro Murata (Waseda University, Japan)

OS5-4: Design of Passive Pipe Health Monitoring Systems

Nayan Jyoti Baishya, Himanshu Panday, Vaibhav Verma and Bishakh Bhattacharya (Indian Institute of Technology Kanpur, India)

Oral Session 6: Circuit and Memory Technologies

Lecture Room S155 (IPS)

Session Chair: Prof. Toshihiko Yoshimasu (Waseda University, Japan)

OS6-1: Design a New Primary Side Feedback Flyback Digital Control LED Driver

Xingyu Gu, Bowen Shi and Baofu Zhao (Southeast University, China)

OS6-2: A High Efficiency Multi-Channel LED Driver Based on Converter-Free Technique and Load Adaptive Method

Si Fu, Minjie Chen, Xutao Lee and Tsutomu Yoshihara (Waseda University, Japan)

OS6-3: Efficiency Improvement of DC-DC Buck Converters by the Switching Frequency Optimized PWM Control

Ning LI, Xutao Li, Minjie Chen (Waseda University, Japan)

OS6-4: Design and Optimization of a High-Performance 1200V 4H -SiC JBS Device

Kuanchen Xiong, Chunde Gu, Siyang Liu and Weifeng Sun (Southeast University, China)

OS6-5: A Low-complexity Decoding Algorithm for Non-binary LDPC Codes and Corresponding Area-efficient Decoder Architecture

Yichao Lu and Satoshi Goto (Waseda University, Japan)

OS6-6: canceled

15:30 ? 16:00

Preparation for Poster and Demonstration Sessions

Student Computer Lab (IPS)

16:00 - 17:00

Poster and Demonstration Sessions

Student Computer Lab (IPS)

Poster Session 1: Algorithm and Processing

Session Chair: Prof. Takayuki Furuzuki (Waseda University, Japan)

PS1-1: USING A WORKFLOW MODEL WITH ICONS TO MANAGE EMERGENCY PLANS

Shuang Li, Cheng Li, Yiping Feng, Wei Weng and Gang Rong (Zhejiang University, China)

PS1-2: Performance analysis of the G.729 voice codecs on VOIP

Fangshuo Liu and Qinyu Wang (Southeast University, China)

PS1-3: A detailed MILP optimization model for steam power system considering economic and environmental aspects

Pengfei Zhang, Hao Zhao, Wei Weng, Yipping Feng and Gang Rong (Zhejiang University, China)

PS1-4: Assembler for de novo Assembly of Large Genomes Based on FM-Index

Peifeng Liang, Yancong Zhang, Kui Lin and Jinglu Hu (Waseda University, Japan)

PS1-5: Exploring the genomic changes between ancestral and evolved Escherichia coli populations

Yan-Cong Zhang and Kui Lin (Beijing Normal University, China)

PS1-6: A Hierarchical SVM Based Multiclass Classification by Using Similarity Clustering

Chao Dong and Jinglu Hu (Waseda University, Japan)

PS1-7: A hierarchical map of variation reconstructed from closely related genomes

Huifen Cao and Kui Lin (Beijing Normal University, China)

PS1-8: Filtering Techniques of Construction of A Quasi-parallel Corpus for Chinese-Japanese SMT system

Hanfei Shen, Wei Yang and Yves Lepage (Waseda University, Japan)

PS1-9: Extending a Training Corpus for SMT by Using Analogical Associations based on Unrelated Monolingual Data

Wei Yang and Yves Lepage (Waseda University, Japan)

PS1-10: Augmenting Phrase Tables for Statistical Machine Translation

Juan Luo and Yves Lepage (Waseda University, Japan)

Poster Session 2: Network with Database

Session Chair: Prof. Mizuho Iwaihara (Waseda University, Japan)

PS2-1: College Coaching Legend

Liangji Fang, Yunke Tang and Siyu Zhu (Southeast University, China)

PS2-2: A FHE public key compression scheme based on pairwise multiplication of PK element

Zhanni Wu, Yuyang Wang and Liquan Chen (Southeast University, China)

PS2-3: Predicting Facebook Users' Interactive Motivations from Observable Factors

Basilisa Mvungi and Mizuho Iwaihara (Waseda University, Japan)

PS2-4: A Data Safe-moving System Based on Wireless Opportunistic Access

Minghao Guo (Southeast University, China)

PS2-5: IDFCGR: AN INTEGRATED DATABASE FOR CUCURBITACEOUS GERMPLASM RESOURCES

Jia Song, Yan-Cong Zhang, Hui-Fen Cao, Bo-Wen Zhang, Zhong-Hua Zhang, San-Wei Huang and Kui Lin (Beijing Normal University, China)

PS2-6: Broadcast Communication System based on LED Devices

Tianyi Lu, Chenwei Xie and Xiaoqing Chen (Southeast University, China)

PS2-7: Improving Software Model Checking on Program Backbone within Distributed System Jiawei Yong, Keiichi Koyanagi, Takeshi Tsuchiya, Tetsuyasu Yamada, and Hiroaki

Sawano (Waseda University, Japan)

PS2-8: OSPF Penetration Testing Based on Route Spoofing Vulnerability

Da Ju, Yubo Song, Yunfeng Xia, Ziqi Xia and Jingyin Zhou (Southeast University, China)

PS2-9: Approximation of Betweenness Centrality for application to the social network

Kazuya Kawamoto, Jun Matsukubo and Yukio Hayashi (Kitakyushu National College of Technology, Japan)

PS2-10: canceled

Poster Session 3: Advanced Control and Systems

Session Chair: Prof. Hee-Hyol Lee (Waseda University, Japan)

PS3-1: An Automated Driving Positioning based on Bayes Method

Yukun Zhang (Waseda University, Japan)

PS3-2: Decouple PID Control of Ultra-Compact Binary Power Generation Plant

Kun-Young Han and Hee-Hyol Lee (Waseda University, Japan)

PS3-3: Bridge Diagnosis Technology Using Wavelet Transform

Ryouta Shimowaki, Hiroshi Inujima, Harutoshi Ogai, Izumi Maruyama and Shinji Nagata (Waseda University, Japan)

PS3-4: Remote Monitoring System with Wireless Network to Support Rescue Operations

Siyang Zhao, Hao Lu, Masaomi Oyama and Shigeyuki Tateno (Waseda University, Japan)

PS3-5: Autonomous driving experiments by small electric vehicle in simulated road

Wu Nan, Ogai Harutoshi, Zhang Qishi, Kamata Seiichirou and Tateno Shigeyuki (Waseda University, Japan)

PS3-6: Development of the Pipe Robot with Flexible Movements and Adapt Diameter

Chan Chu Kang and Ogai Harutoshi (Waseda University, Japan)

PS3-7: Human Detection And Tracking Under Complex Poses Using Poselet With Particle Filters

Ngoc Nam Bui, Thuong Khanh Tran, Jin Young Kim and The Bao Pham (Chonnam National University, Korea)

PS3-8: Precise Position Control of Shoes-upper for Screen Printing Machine Using Image Processing Techniques

Trong Hieu Bui and Thanh Huy Phung (Ho Chi Minh City University of Technology, Viet Nam)

PS3-9: Design and Implementation of Embedded Express Delivery System Based on QR Code

Yihua Ma and Yawen Sun (Southeast University, China)

Poster Session 4: Circuite Design and Implementation for Integrated Systems

Session Chair: Prof. Toshihiko Yoshimasu (Waseda University, Japan)

PS4-1: An Implantable Self-Adaptive Wireless Power Transmission System

Bin Li and Kun Wang (South China University of Technology, China)

PS4-2: Full wave CMOS rectifier with a switch controlled compensation for wireless power

transfer

Qiang Li, Jing Wang and Yasuaki Inoue (Waseda University, Japan)

PS4-3: An Improved Approach to Parameter Extraction for De-embedding

Jiang Yang and Ludi Li (Southeast University, China)

PS4-4: Design and Optimization of a High-Performance 1200V 4H -SiC JBS Device

Kuanchen Xiong, Chunde Gu, Siyang Liu and Weifeng Sun (Southeast University, China)

PS4-5: A 2.5-GHz High Efficiency Class-E CMOS Amplifier IC for Low Supply Voltage

Taufiq Alif Kurniawan, Xin Yang, Zheng Sun, Xiao Xu and Toshihiko Yoshimasu (Waseda University, Japan)

PS4-6: Characteristics of Impulse Creepage Discharge Development under Impulse Voltage Application in Oil/Pressboard Composite Insulation System

Shigeyoshi Yoshida, Masahiro Kozako, Masayuki Hikita, Soichiro Kainaga, Takahiro Umemoto, Hirotaka Muto and Takao Tsurimoto (Kyusyu Institute of Technology, Japan)

PS4-7: Evaluation of Prototype Online Partial Discharge Monitoring and Diagnosis System in Commercial Facility Distribution Transformer

Yuki Tai, Masahiro Kozako and Masayuki Hikita (Kyusyu Institute of Technology, Japan)

PS4-8: The Limitation for the growth of Step of DPTA Method

Xiao Wu, Zhou Jin, and Yasuaki Inoue (Waseda University, Japan)

PS4-9: A Norm step size control algorithm for the PTA method to find DC operating points

Zhou Jin, Xiao Wu and Yasuaki Inoue (Waseda University, Japan)

PS4-10: A Sub-1-V Supply-Insensitive Bandgap Reference Circuit without Resistors

Jing Wang, Qiang Li, Li Ding, Hui Zhu, Ting Wang and Yasuaki Inoue (Waseda University, Japan)

PS4-11: Design Of High-Accuracy Current Sensing Circuit For Single Photon Avalanche Diodes

Jin Wu, Qun Yao, Ling-ku Chang, Ke Song and Jun-Hong Tu (Southeast University, China)

PS4-12: Design a New Primary Side Feedback Flyback Digital Control LED Driver

Xingyu Gu, Bowen Shi and Baofu Zhao (Southeast University, China)

13 November (Thu)

09:00 - 12:00

Factory Tours

12:00 - 13:30

Lunch

Student Lobby and Lecture Room S104 (IPS)

13:30 - 15:30

Oral Sessions

Oral Session 7: Information Processing for Artificial Wisdom

Lecture Room S153 (IPS)

Session Chair: Prof. Yujie Zhang (Beijing Jiaotong University, China)

OS7-1: Building Topical Poetry Generation Systems

Ruli Manurung (Universitas Indonesia, Indonesia)

OS7-2: Extending a Training Corpus for SMT by Using Analogical Associations based on Unrelated Monolingual Data

Wei Yang and Yves Lepage (Waseda University, Japan)

OS7-3: Character-level dependency model for joint word segmentation, POS tagging, and dependency parsing in Chinese

Zhen Guo, Yujie Zhang, Chen Su and Jinan Xu (Beijing Jiaotong University, China)

OS7-4: Augmenting Phrase Tables for Statistical Machine Translation

Juan Luo and Yves Lepage (Waseda University, Japan)

OS7-5: Exploring the genomic changes between ancestral and evolved *Escherichia coli* populations

Yan-Cong Zhang and Kui Lin (Beijing Normal University, China)

OS7-6: A hierarchical map of variation reconstructed from closely related genomes

Huifen Cao and Kui Lin (Beijing Normal University, China)

Oral Session 8: Thinking Network with Distributed System

Lecture Room S154 (IPS)

Session Chair: Prof. Lin Lin (Dalian University of Technology, China)

OS8-1: Quantitative Analysis of RBAC Model

Qian He and Yaping Dai (Beijing Institute of Technology, China)

OS8-2: OSPF Penetration Testing Based on Route Spoofing Vulnerability

Da Ju, Yubo Song, Yunfeng Xia, Ziqi Xia and Jingyin Zhou (Southeast University, China)

OS8-3: canceled

OS8-4: Large-scale Optimization for Deep Learning

Lin Lin (Dalian University of Technology, China)

OS8-5: Development and Reliability Testing of IEEE1888 Gateway for ZigBee Wireless Sensor Network in Chulalongkorn University's Building Energy Management System

Tankorn Inthasut and Chaodit Aswakul (Chulalongkorn University, Thailand)

Oral Session 9: Community Computing and Robotic Interaction II

Lecture Room S103 (IPS)

Session Chair: Prof. Wen-June Wang (National Central University, Taiwan)

OS9-1: Development of Inertial Navigation Based Person Following Mobile Robots

Kaixuan Wang and Guoyu Lin (Southeast University, China)

OS9-2: Human-Machine Interaction using the Projection Screen and Light Spots from Multiple Laser Pointers

Jian Zhou and Takafumi Matsumaru (Waseda University, Japan)

OS9-3: Audio Power Amplifier With Howling Detecting And Prevention

Dee Wu (Southeast University, China)

OS9-4: Traffic Engineering Framework with Machine Learning based Meta-layer in Software-Defined Networks

YanJun Li, Xiaobo Li and Osamu Yoshie (Waseda University, Japan)

OS9-5: Querying with Team Context Information

Xiang Li and Xiaolu Lu (Nanjing University, China)

Oral Session 10: Soft Computing

Lecture Room S105 (IPS)

Session Chair: Prof. Chia Yee Ooi (Universiti Teknologi Malaysia, Malaysia)

OS10-1: A hybrid GPSO with structure learning and fuzzy reasoning for training a NN

Haydee Melo and Junzo Watada (Waseda University, Japan)

OS10-2: Pheromone-Based Kohonen Self-Organizing Map (PKSOM) in Clustering of Tropical Wood Species: Performance and Scalability

Azlin Ahmad, Rubiyah Yusof and Yasue Mitsukura (Universiti Teknologi MARA, Malaysia)

OS10-3: European option pricing model in a fuzzy environment

Huiming Zhang and Junzo Watada (Waseda University, Japan)

OS10-4: Solving Imbalance Data Classification Problem by Particle Swarm Optimization based Support Vector Machine

Zhenyuan Xu, Mingnan Wu, Junzo Watada, Zuwarie Ibrahim and Marzuki Khalid (Waseda University, Japan)

Oral Session 11: Advanced Material Technologies

Lecture Room S106 (IPS)

Session Chair: Prof. Xingyi Huang (Shanghai Jiao Tong University, China)

OS11-1: Preparation of Core-shell Structured Polystyrene/BaTiO₃ Nanocomposites for High-k Dielectric Applications

Ke Yang, Xingyi Huang and Pingkai Jiang (Shanghai Jiao Tong University, China)

OS11-2: Core-shell Structured Dielectric Polymer Nanocomposites with High Dielectric

Constant and Low Dielectric Loss for Energy Storage Application

Xingyi Huang, Liyuan Xie, Ke Yang and Pingkai Jiang (Shanghai Jiao Tong University, China)

OS11-3: Surface Analysis of Epoxy Nanocomposite Insulator Materials Eroded by Partial Discharge

Tomonori Iizuka, Yuqing Zhou, Tomoaki Maekawa, Toshikatsu Tanaka and Kohei Tatsumi (Waseda University, Japan)

OS11-4: canceled

OS11-5: Ligand effect on charge transfer in hybrid graphene nanomesh-quantum dots photodetectors

Nianze Liu, Xian Liu and Xiangbing Ji (Southeast University, China)

OS11-6: High-performance Infrared Photodetector based on Graphene-Germanium Quantum Dots Hybrids

Xiangbing Ji, Xiang Liu and Nianze Liu (Southeast University, China)

Oral Session 12: Multimedia Signal Processing Systems

Lecture Room S155 (IPS)

Session Chair: Prof. Takeshi Ikenaga (Waseda University, Japan)

OS12-1: Linear Adaptive Search Range Model for Uni-prediction and Motion Analysis for Bi-prediction in HEVC

Longshan Du, Zhenyu Liu, Takeshi Ikenaga and Dongsheng Wang (Tsinghua university, China)

OS12-2: Hardware Oriented Category Pre-determination Algorithm for SAO in HEVC

Gaoxing Chen, Zhenyu Liu and Takeshi Ikenaga (Waseda University, Japan)

OS12-3: Coding Unit and Prediction Unit Pre-selection in HEVC Intra Encoding

Xianyu Yu, Guodong Liu, Jia Zhu, Zhenyu Liu and Dongsheng Wang (Tsinghua university, China)

OS12-4: Improved Player Tracking by using Prediction After Intersection for Volleyball Match Video

Xina Cheng, Yuhi Shiina, Xizhou Zhuang and Takeshi Ikenaga (Waseda University, Japan)

OS12-5: Motion Area based Exposure Fusion Algorithm for Ghost Removal in High Dynamic Range Video Generation

Shu-Yi Huang, Qin Liu, Hao Wang and Takeshi Ikenaga (Waseda University, Japan)

OS12-6: Performance Evaluation of MIMO Systems under Different Channel Conditions

Hanjing Fang and Jiaheng Wang (Southeast University, China)

15:30 ? 16:00

Preparation for Poster and Demonstration Sessions

Student Computer Lab (IPS)

16:00 - 17:00

Poster and Demonstration Sessions

Student Computer Lab (IPS)

Poster Session 5: Community with Interaction I

Session Chair: Prof. Yves Lepage (Waseda University, Japan)

PS5-1: Improvement of IDAT and new application development

Chuankai Dai and Takafumi Matsumaru (Waseda University, Japan)

PS5-2: SAKSHAR: An Image-projective Desktop Varnamala Trainer (IDVT) for Interactive Learning of Alphabets

R. P. Joshi, R. A. Bobby, S.K. Saha and T. Matsumaru (Indian Institute of Technology Delhi, India)

PS5-3: Multi-finger Touch Interface based on ToF camera and webcam

Lixing Zhang and Takafumi Matsumaru (Waseda University, Japan)

PS5-4: A Mechanic Arm and Hand Control System Design Based on Infrared and Color Image Sensors

Rui Zhu, Minjun Wu, Hongsheng Jin and Yongming Tang (Southeast University, China)

PS5-5: Heart Sound Authentication System Based On Multiple Features

Jinzhou Cai (Southeast University, China)

PS5-6: Development of calligraphy-stroke learning support system using projection

Masashi Narita and Takahumi Matsumaru (Waseda University, Japan)

PS5-7: Study in MEMS Residual Stress Test Structure

Yichao Zhou, Zaifa Zhou and Ninghuan Wang (Southeast University, China)

PS5-8: The Bi₂Te₃-based thermal-electric film structure with high photon-to-heat conversion in the 250-1200 nm wavelength region

E. T. Hu, Y. Yao, K. Y. Zang, J. Li, Y. X. Zheng, R. J. Zhang, S. Y. Wang, L. Y. Chen, N. He, O. Yoshie, Yang-Pak Lee, C. Z. Wang and D. W. Lynch (Fudan University, China)

PS5-9: The Application of Cell Automation Model on Intelligent Traffic System

Shengqi Wu, Tianyi Lu and Chenwei Xie (Southeast University, China)

PS5-10: Multi-Agent Diagnosis Service with Data Collection by Energy Harvesting for Rotating Machines

Munawir and Osamu Yoshie (Waseda University, Japan)

Poster Session 6: Community with Interaction II

Session Chair: Prof. Takafumi Matsumaru (Waseda University, Japan)

PS6-1: Development of Inertial Navigation Based Person Following Mobile Robots

Kaixuan Wang and Guoyu Lin (Southeast University, China)

PS6-2: Human-Machine Interaction using the Projection Screen and Light Spots from Multiple Laser Pointers

Jian Zhou and Takafumi Matsumaru (Waseda University, Japan)

PS6-3: Audio Power Amplifier With Howling Detecting And Prevention

Dee Wu (Southeast University, China)

PS6-4: Traffic Engineering Framework with Machine Learning based Meta-layer in Software-Defined Networks

Yanjun Li, Xiaobo Li and Osamu Yoshie (Waseda University, Japan)

PS6-5: Eye Controlled Mouse Technology Based On Eye Tracking

Qiwen Zhu, Longxin Yan, Ruolan Zhang, Shuai Zhang and Lanlan Yang (Southeast University, China)

PS6-6: The Recognition of Sudoku Based on Computer Vision

Mingshu Li (Southeast University, China)

PS6-7: Virtual Musical Instruments based on Interactive Multi-Touch system sensing by RGB Camera and IR Sensor

Thanapat Mekrunroj, Phonpatchara Chochai and Takafumi Matsumaru (Waseda University, Japan)

PS6-8: A Model for Evaluating People's Influence in Social Network

Lingchen Zheng, Yi Yang and Yan Xu (Southeast University, China)

PS6-9: Real-Time 3-D Generation System Based on Auto Comfortable Disparity Adjustment

Hong-Peng Lee, Yi-Ming Chung and Pei-Jun Lee (National Chi Nan University, Taiwan)

PS6-10: Screen Camera Position Calibration and Projected Screen Detection

Yoichi Furumi and Takafumi Matsumaru (Waseda University, Japan)

Poster Session 7: Advanced Material Technologies

Session Chair: Prof. Kohei Tatsumi (Waseda University, Japan)

PS7-1: High-Temperature-Resistant Interconnection Using Nickel Nanoparticles for SiC Power Devices

Yasunori Tanaka, Suguru Hashimoto, Tomonori Iizuka and Kohei Tatsumi (Waseda University, Japan)

PS7-2: Surface Analysis of Epoxy Nanocomposite Insulator Materials Eroded by Partial Discharge

Tomonori Iizuka, Yuqing Zhou, Tomoaki Maekawa, Toshikatsu Tanaka and Kohei Tatsumi (Waseda University, Japan)

PS7-3: Low resolution image feature points detection and registration

Wei Feng, Masataka Fujimoto, Yupeng Zhang, Satoshi Ikezawa and Toshitsugu Ueda

(Waseda University, Japan)

PS7-4: The Photoelectric Dual Function Transformation Of TEM In Situ Sample Rod And It's Power System's Optimization Design

Shibin Zhang, Yang Li, Han Haixia, Dong Hui and Xu Feng (Southeast University, China)

PS7-5: Design and Simulation of Testing Structures of Residual Stress on MEMS Thin Film

Chenfeng Tu, Yanbo Xu and Zaifa Zhou (Southeast University, China)

PS7-6: Ligand effect on charge transfer in hybrid graphene nanomesh-quantum dots photodetectors

Nianze Liu, Xian Liu and Xiangbing Ji (Southeast University, China)

PS7-7: High-performance Infrared Photodetector based on Graphene-Germanium Quantum Dots Hybrids

Xiangbing Ji, Xiang Liu and Nianze Liu (Southeast University, China)

PS7-8: Design of a quartz monolithic vibrating beam accelerometer

Fengrui Bai, Jinxing Liang and Toshitsugu Ueda (Southeast University, China)

PS7-9: Design and Evaluation of a Quartz Crystal Microbalance under Lateral Field Excitation

Ting Kong, Jinxing Liang and Toshitsugu Ueda (Southeast University, China)

Poster Session 8: Algorithm and Architecture Design for Digital Signal Processing

Session Chair: Prof. Takeshi Ikenaga (Waseda University, Japan)

PS8-1: Technology Developments for Integrated Demand Response, Distributed Energy Resources, and Energy Storage in Taiwan

H-T Yang and J-T Liao (National Cheng-Kung University, Taiwan)

PS8-2: FPGA based 3820x2160@60p Video Decoding and Displaying System

Haoming Zhang, Dajiang Zhou and Satoshi Goto (Waseda University, Japan)

PS8-3: canceled

PS8-4: A Low-Cost VLSI Architecture of Multiple-Size IDCT for H.265/HEVC

Heming Sun and Shinji Kimura (Waseda University, Japan)

PS8-5: Fast SAO Estimation Algorithm and Its Implementation for 8Kx4K @ 120 FPS HEVC Encoding

Jiayi Zhu, Dajiang Zhou, Shinji Kimura and Satoshi Goto (Waseda University, Japan)

PS8-6: Performance Evaluation of MIMO Systems under Different Channel Conditions

Hanjing Fang and Jiaheng Wang (Southeast University, China)

PS8-7: High-Speed CORDIC Processor for PSO Applications

Kui-Ting Chen, Xiaojun Han, Ke Fan and Takaaki Baba (Waseda University, Japan)

PS8-8: Hardware Implementation of MSPSO for Non-Linear Application

Ke Fan, Kui-Ting Chen, Yijun Dai and Takaaki Baba (Waseda University, Japan)

PS8-9: Design of copy prevention circuit and system based on AES encryption circuit

Yuhao Zhang, Zhipeng Xu, Xinrui Huang, Hang Hu and Weiwei Shan (Southeast University, China)

PS8-10: canceled

PS8-11: Application of Digital Signal Processing Technique for Power Quality Event Detection

Chih-Hung Lee and Men-Shen Tsai (National Taipei University of Technology, Taiwan)

17:10 - 17:50

IPS Laboratory Tours

Student Lobby (IPS)

Tour 1: Information Architecture for Artificial Wisdom

- Data Engineering, - Example-based Machine Translation/NLP

Tour 2: LSI Design and Verification Technologies

- Circuit-Level Verification Technologies, - High-Frequency Circuits

Tour 3: Robotics, Control and Computational Intelligence

- Process Control, - Bio-Robotics and Human-Mechatronic

18:00 - 20:00

Banquet

2. 會議主題：

The 8th International collaboration Symposium on Information, Production and Systems (ISIPS 2014) aims to bring together researchers from different countries and to promote a synergy collaborated research with the creation and exchange of ideas related to Information, Production Systems and Integrated Systems.

3. 發表論文：

Real-Time 3-D Generation System Based on Auto Comfortable Disparity Adjustment

Hong-Peng Lee, Yi-Ming Chung, Pei-Jun Lee

Department, Institution's Name, Address, Country Department of Electrical Engineering, National Chi Nan University

Abstract

This study designs a real time 3D content generation system that provides the user a comfortable 3D experience through an auto disparity adjustment. The system contains the 3D content synthesis and disparity adjustment subsystem. The 3D content synthesis subsystem uses 2D image and its depth to generate virtual images. A sensor is used to obtain the distance between the viewer and display to adjust the correlation of the disparity and depth value. All the system is implemented on FPGA demoboard.

Keywords: FPGA, DIBR, View distance, Watching comfort, Disparity adjustment.

1 Introduction

The sense of watching 3-D is coming two images captured from left-eye and right-eye in brain. In other word, let left-eye and right-eye watch relative image would have the sense of 3-D. The scene watching in left-eye and right-eye is different in horizontal and the difference is according to the distance from viewer to objects. The disparity of objects in left-eye and right-eye is bigger when the objects are closer to viewer while the disparity is smaller when the objects are farer from viewer. It is easy to figure out when close right-eye and left-eye in turns to watch.

Placing two cameras in parallel could generate simulated images as human visual system. However, it cost more resources. Viewer will not always watch image at same position. When the position of viewer and cameras is different the sense of 3-D will not match real situation. Therefore, utilize an image and its depth information which is called depth map to generate virtual views in different viewpoints is a popular method in recent years.

This paper use FPGA to fulfil the generation for multi-view virtual images from an image and its depth map. The interface of input and output is DVI. Place original image in left-hand side and its depth map in right-hand side as the input of DVI. There is a distance sensor to detect the distance from viewer to display. Furthermore, adjust the quality of virtual images. The disparity in virtual images would be increased when viewer stand close to display and the disparity would be decreased when the viewer is far from displayer.

2 Background

Objects have horizontal disparity in left-eye and right-eye. Objects capturing in left-eye is closer to right-hand side than right-eye. Moreover, the shift will be more obvious when objects are more close to viewer. 3-D virtual image could be generated by utilizing this phenomenon.

A. Depth Map

The distance from viewer to objects is presented in grey-scale value. The range of grey-scale value is from 0 to 255. Smaller value presents longer distance and bigger value presents shorter distance. It could be seen in Fig. 1.



Fig. 1 A colour image and its corresponding depth map

B. The Generation of Virtual Image

As mentioned in section 1, the sense of 3-D is due to the combination of images captured from left-eye and right-eye in brain. Depth Image Based Rendering (DIBR) is a technique coming single-view image and its depth map to generate multi-view images which is suitable for human visual system.

C. Multi-View Images

People will not always watch video at the same position. When the position of viewer and displayer is different comparing with cameras and the scene which generate video in the displayer, the sense of 3-D is not match real-situation. That is the motivation for several different virtual images in different viewpoint.

D. DVI Signal Protocol

The signals needing process in DVI protocol are include HS: This signal stays in high-level until a line of a frame is finished transition. Low-level is the condition to wait synchronization. VS: This signal stays in high-level until a frame is finished transition. Low-level is the condition to wait synchronization. Data: It is the information of a pixel in a frame containing red, green and blue data. Each colour is delivered in parallel at the same time and presented in 12 bits. Clock: An oscillator for data synchronization. Data Enable (DE): Data could be only transited or delivered when DE is high-level.

E. Distance Sensor

The sensor is used to obtain the distance between the viewer and displayer as shown in Fig. 2. Utilize the distant parameter to adjust the quality of 3-D image. The sensor sends a pulse signal and stop when receive the echo. According to the interval between sending pulse and receiving echo the distance between viewer and displayer could be calculated.

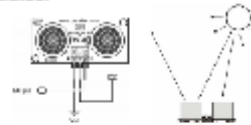


Fig. 2 The chip of distant sensor and its working method

3 FORMULA DERIVING AND SIMULATION

A warping formula is proposed in this paper to achieve more comfortable 3-D watching. The 3-D image would have positive disparity and negative disparity by applying this formula. 3-D visual system with negative disparity