

# **IWBIS 2016**

2016 International Workshop on Big Data and Information Security

October 18-19 th, 2016 East Jakarta, Indonesia



#### **CONFERENCE INFORMATION**

**Dates** October 18<sup>th</sup> (Tuesday) – October 19<sup>th</sup> (Wednesday) 2016

Organizer Faculty of Computer Science, Universitas Indonesia

**Venue** Hotel Santika Taman Mini Indonesia Indah – Jakarta

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Official Language English

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W: http://www.cs.ui.ac.id

**Conference Website** http://iwbis.cs.ui.ac.id

#### **COMMITTEES**

#### **Honorary Chairs:**

- A. Jain, IEEE Fellow, Michigan State University, US
- T. Fukuda, IEEE Fellow, Nagoya University, JP
- M. Anis, Universitas Indonesia, ID
- M. Adriani, Universitas Indonesia, ID

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- M. I. Fanany, Universitas Indonesia, ID
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- T. Salakoski, University of Turku, FI
- W. C. Wibowo, Universitas Indonesia, ID
- W. S. Nugroho, Universitas Indonesia, ID
- X. Li, University of Queensland, AU
- Y. Huang, Sinica, TW
- Y. G. Sucahyo, Universitas Indonesia, ID

#### **Local Organizing Committee:**

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### Santika Hotel Taman Mini Indonesia Indah (TMII)

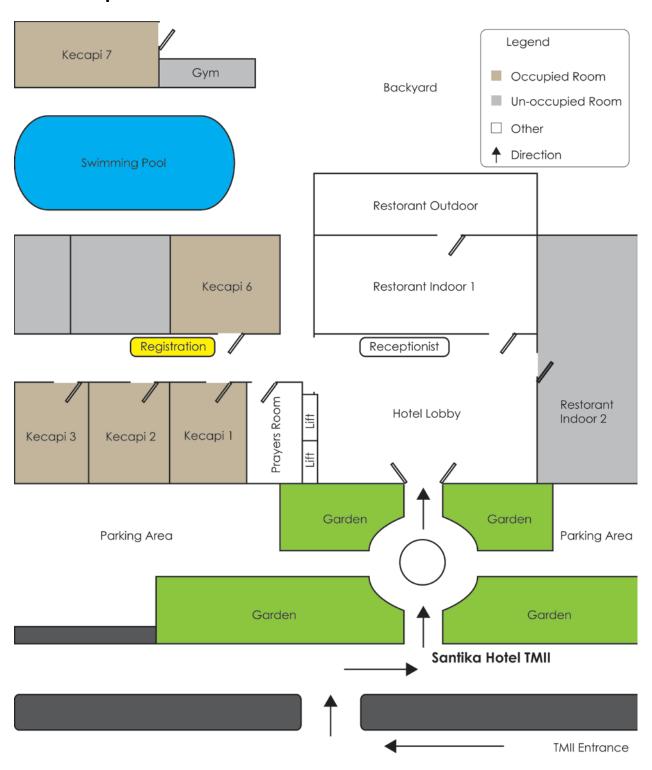
Hotel Santika Taman Mini Indonesia Indah – Jakarta

Jalan Pintu 1, Taman Mini Indonesia Indah

Jakarta Timur 13880



### **Venue Map**



#### **REGISTRATION**

#### **Registration Fee**

Accepted Paper USD 300 (International)

IDR 3.000.000 (Domestic)

Additional Page USD 10 (IDR 120.000) (per page)

Participant USD 150 (International)

IDR 750.000 (Domestic)

#### **Payment Method**

All payment for the administration fee and additional events should be transferred to the bank account below:

Recipient Bank :BNI

Account Name :UNIVERSITAS-INDONESIA-Fasilkom Non BP

Account Number :127 3000 444

Swift Code :BNI NIDJA 127 3000 444

### **PROGRAM SCHEDULE**

Day 1, October 18th, 2016

			Ro			
Time		Room (Kecapi 6)		m 1 (Kecapi 7)		m 2 (Kecapi 1)
	Event	Event Details	Event	Event Details	Event	Event Details
08:00-09:00		On and an Constant from	Regis	tration		
09:00-09:05		Opening Speech from the General Chair of IWBIS 2016 (Prof. Heru Suhartanto, Ph.D)				
09:05-09:10	Opening Ceremony	Opening Speech from the Dean of Faculty of Computer Science Universitas Indonesia (Mirna Adriani, Ph.D)				
09:15-09:30			Coffee	Break		
09:30-10:20		Session 1: "Overview of Big Data and Its Tools"				
10:20-11:10	Big Data Workshop by "Labs247"	Session 2: "Big Data Engineering & Processing: Demo & Hands-on"				
11:10-12:00		Session 3: "Big Data Analytics: Demo"				
12:00-13:00			Lui	nch		
13:00-14:00			Scientific Writing	Session 1	FGD	Private meeting only for invited
14:00-15:15			Seminar & Workshop	Session 2	"Telehealth"	participants.
15:15-15:45		,		Break	1	
15:45-17:00			Scientific Writing	Session 3	FGD "loT"	Private meeting only for invited
17:00-18:00			Seminar & Workshop	Session 4		participants

### Day 2, October 19, 2016

	Room					
Time		m (Kecapi 6)	Parallel Roon		Parallel Roon	
	Event	Event Details	Event	Event Details	Event	Event Details
08:00-09:00		T	Regist	tration	1	
09:00-09:30	Keynote Speech I: Prof. Tapio Salakoski University of Turku, Finland	Moderator: Dr. Ade Azurat				
09:30-10:00	Keynote Speech II: Prof. Dr. Xue Li University of Queensland, Australia	Moderator: Prof. Heru Suhartanto				
10:00-10:30	Keynote Speech III: Dr. Nico Neumann University of South Australia, Australia	Moderator: Prof. Heru Suhartanto				
10:30-11:00			Coffee	Break		
11:00-12:00			Parallel Session I: Paper Presentation	Session Chair: Bayu Anggoro Jati, Ph.D / Yulistian Wardhana, M.Kom.	Parallel Session II: Paper Presentation	Session Chair: Dr. Eng. Adi Wibowo / Yova Ruldeviyani, M. Kom.
12:00-13:00			Lur	nch	•	
13:00-13:30	Keynote Speech IV: Dr. Huang Yen-Nun Academia Sinica, Taiwan	Moderator: Dr. Setiadi Yazid				
13:30-14:00	Keynote Speech V: Dr. Jun Zhang Deakin University, Australia	Moderator: Ari Saptawijaya, Ph.D				
14:00-14:30	Keynote Speech VI: Dr. Eng. Wisnu Jatmiko Universitas Indonesia	Moderator: Ari Saptawijaya, Ph.D				
			Parallel Session	Session Chair: Bayu Anggoro Jati, Ph.D / Yulistian	Parallel Session IV: Paper	Session Chair: Dr. Eng. Adi Wibowo / Yova
14:30-15:30			Paper Presentation	Wardhana, M.Kom.	Presentation	Ruldeviyani, M. Kom.

			Room				
Time	Theater Roo	Theater Room (Kecapi 6)		Parallel Room 1 (Kecapi 1)		Parallel Room 2 (Kecapi 2)	
	Event	Event Details	Event	Event Details	Event	Event Details	
16:00-17:00			Parallel Session V: Paper Presentation	Session Chair: Bayu Anggoro Jati, Ph.D / Yulistian Wardhana, M.Kom.	Parallel Session VI: Paper Presentation	Session Chair: Dr. Eng. Adi Wibowo / Yova Ruldeviyani, M. Kom.	
17:00-18:00	Closing Ceremony	Awards Announcement and Photo Session					

#### **KEYNOTE SPEAKER**

- Nico Neumann, University of South Australia, AU
- Yen Nun Huang, Academia Sinica, TW
- Tapio Salakoski, University of Turku, FI
- Xue Li, University of Queensland, AU
- Jun Zhang, Deakin University, AU
- Wisnu Jatmiko, Universitas Indonesia, ID

#### Medical Warning System Based on Internet of Things Using Fog Computing

Iman Azimi, Arman Anzanpour, Amir M. Rahmani, Pasi Liljeberg, and Tapio Salakoski

Department of Information Technology, University of Turku, Finland

#### **Abstract**

Remote patient monitoring is essential for many patients that are suffering from acute diseases such as different heart conditions. Continuous health monitoring can provide medical services that consider the current medical state of the patient and to predict or early-detect future potentially critical situations. In this regard, Internet of Things as a multidisciplinary paradigm can provide profound impacts. However, the current IoT-based systems may encounter difficulties to provide continuous and real time patient monitoring due to issues in data analytics. In this paper, we introduce a new IoT-based approach to offer smart medical warning in personalized patient monitoring. The proposed approach consider local computing paradigm enabled by machine learning algorithms and automate management of system components in computing section. The proposed system is evaluated via a case study concerning continuous patient monitoring to early-detect patient deterioration via arrhythmia in ECG signal.

#### **Profile**



Prof. Tapio Salakoski is a Professor in Department of Information Technology, University of Turku, Turku, Finland.

His major areas of research interests and expertise include: Data Mining, Bioinformatics, and Machine Learning.

Prof. Tapio Salakoski is vice-director at TUCS, within which he leads two laboratories. He is the main leader of the bioinformatics laboratory and the coleader (with Back) of the learning and reasoning laboratory.

#### **Advancing Public Health Genomics**

Xue Li, Xin Zhao, Mingyang Zhong

School of Information Technology and Electrical Engineering, the University of Queensland, Brisbane, Australia

#### **Abstract**

With the rapid development of theory and practice in Genomics, research on Public Health Genomics, as a new field is beginning to contribute to people's life. A huge number of genomics data is available but not yet readily used in clinical services. A gap exists between genomics research and public healthcare genomics applications. We believe that machine intelligence can play an important role in the transferring Genomics knowledge to practical use. As a vision of our research, in this paper we present the usefulness of applying machine intelligence to public health genomics.

#### **Profile**



Dr Xue Li is a Professor in the School of Information Technology and Electrical Engineering at the University of Queensland (UQ) in Brisbane, Queensland, Australia. His major areas of research interests and expertise include: Data Mining, Social Computing, Database Systems, and Intelligent Web Information Systems.

Dr Xue Li is honoured as one of "the most powerful people in Australia" on Big Data by the Financial Review. He also member of ACM, IEEE, and SIGKDD.

# Overview of Research Center of Information Technology Innovation in Taiwan Academia Sinica

#### Yennun Huang, Szu-Chuang Li

The Research Center for Information Technology Innovation, Academia Sinica, Taiwan

#### **Abstract**

The Research Center for Information Technology Innovation (CITI) at Academia Sinica was founded in February 2007, with the purpose to integrate the research and development activities in information technologies among various organizations in Aca-demia Sinica, and also to further leverage IT-related multi-disciplinary research. In CITI, Ministry of Science and Technolo-gy funded Taiwan Information Security Center (TWISC) to do research on security. TWISC pulls together experts in infor-mation security from various universities and research institutes in Taiwan with an aim to boost research and development activi-ties in information security, promote public awareness, and foster partnership among government, academia, and the private sector. Its research topics cover data/ software/ hardware/ network secu-rity and security management. TWISC has become the hub of security research in Taiwan and have been making significant impact through publishing and creating of toolkits. Recently pri-vacy also becomes one of the main focuses of TWISC. The re-search team at CITI, Academia has been working on a viable way to assess the disclosure risk of synthetic dataset. Preliminary research result will be presented in this paper.

#### **Profile**



Dr. Huang received his PhD in Computer Science from University of Maryland. Dr. Huang has 20 US patents awarded and more than 70 papers published in well-known journals and conferences. His patents have generated millions of US dollars license income for AT&T and Lucent and created two telecom products. His 1995 Software rejuvenation paper initiated software fault avoidance and prevention research area.

Dr. Huang currently is the CEO of Security Research Center in Academia Sinica and the Deputy Executive Secretary of Science and Technology Advisory Group

of Executive Yuan, helping Premier of Executive Yuan in Taiwan on the Information and Communication Technology (ICT) development policy and funding allocation. Dr. Huang was elected as a 2012 IEEE Fellow.

# The Power of Big Data and Algorithms in Advertising and Customer Communication

#### **Nico Neumann**

The Centre for Algorithmic Commerce and Technology, Sidney, Australia

#### **Abstract**

Leveraging customer data in scale, and often in real time, has led to a new field called \*programmatic commerce -\* the use of data, automation and analytics to improve customer experiences and company performances. Specifically in advertising and marketing, programmatic applications have become very popular due to three key benefits: (1) faster buying processes, (2) personalization and (3) micro-targeting. In this talk, Dr. Neumann will discuss the development of this new field and share some real-world case studies illustrating the power of big data and algorithmic decision-making to drive business outcomes.

#### **Profile**



Dr Nico Neumann is a senior researcher for programmatic strategy, business technology and analytics at the University of South Australia. He is a frequently invited keynote speaker at international industry events and a member of the advisory board of MediaMath's New Marketing Institute. Before joining UniSA, Nico has worked for Accenture Management Consulting, Datalicious and IPG Mediabrands, where he was the Lead Statistician for Product Development.

#### Flow-Based Traffic Retrieval Using Statistical Features

#### Jun Zhang and Andrzej Goscinski

TSchool of Information Technology, Deakin University, Victoria, Australia

#### **Abstract**

This paper proposes a new technique, flow-based traffic retrieval (FBTR), to find traffic flows that satisfy an information need from within large collections of network traffic. It is shown that flow-based traffic retrieval will become a powerful tool in network management and security. For example, the retrieved traffic flows can be used to help analysing new applications/protocols and detecting unknown attacks. In the context of flow-based traffic retrieval, a traffic flow is represented by a vector that consists of a set of flow statistics, such as the average of packet sizes and the average of inter-packet times. The user can submit a traffic flow, or several traffic flows, and ask for "similar" traffic flows to be retrieved from a traffic collection. Similarity search is based on comparing flow vectors in a feature space. We have done some preliminary experiments to evaluate the performance of flow-based traffic retrieval. The results show flow-based traffic retrieval has potential to quickly and accurately find user-interested network traffic, even encrypted traffic.

#### **Profile**



Dr. Jun Zhang leads a research and development team (15+ members) working in cyber security, big data analytics and image privacy. He received his PhD from University of Wollongong, Australia, in 2011. Jun Zhang is the HDR coordinator, a research theme leader of Deakin SRC Centre for Cyber Security Research. He has published more than 60 research papers in refereed international journals and conferences, such as IEEE/ACM Transactions on Networking (ToN), IEEE Transactions on Image Processing (TIP), IEEE Transactions on Parallel and Distributed Systems (TPDS), IEEE Transactions on

Dependable and Secure Computing (TDSC), IEEE Transactions on Information Forensics and Security (TIFS), and IEEE Transactions on Systems, Man and Cybernetics - Part B (TSMC-B), IEEE Transactions on Network and Service Management (TNSM). Jun Zhang received 2009 Chinese government award for outstanding student abroad. He is a member of the IEEE.

#### A Review of Big Data Analytics in the Biomedical Field

#### Wisnu Jatmiko

Faculty of Computer Science, Universitas Indonesia

#### **Abstract**

In the recent years, the volume of data that exists in the world has risen dramatically. Biomedical data are data that are recorded from a living being that is used to help analyzing and diagnosis of a certain illness. Like many other types of data, the volume biomedical data has also risen in the last couple of years. In order to process this large amount of data, conventional processing techniques are not adequate. In this paper, we discuss several approach in processing large amount of biomedical data. This paper will also discuss several variations of biomedical data and the challenge that are faced when processing those biomedical data in large sizes.

#### **Profile**



Born in Surabaya, Indonesia, December, 1973. Received B.Eng. degree from Electrical Engineering in 1997, M.Sc. degree from Computer Science in 2000, both from the University of Indonesia, Indonesia, and Dr. Eng. degree from Micro-Nano Systems Engineering, Nagoya University, Japan, in 2007, respectively. Currently, he works at Faculty of Computer Science, University of Indonesia, Indonesia as a lecturer. He is regarded as a highly productive researcher and has more than 100 international publications that are mostly indexed in Scopus and Google Scholar. In addition, he has already published 6

books and produced 4 copyrights of computer software from his research products.

#### **TECHNICAL PROGRAM IWBIS 2016**

**Opening Ceremony** 

Venue: Kecapi 6 Room

Tuesday, Oct 18 09:00-09:15

Opening remarks by Prof. Heru Suhartanto

Big Data Workshop by "Labs247"

Venue: Kecapi 6 Room

Tuesday, Oct 18 09:30-12:00

Speakers:

- Solichoel Arifin, M.Sc.

- Ferry Pranolo

- Sigit Prasetyo

Scientific Writing Seminar & Workshop

Venue: Kecapi 7 Room

Tuesday, Oct 18 13:00-18:00

Speaker:

Harry Budi Santoso, Ph.D Dr. Eng. Wisnu Jatmiko

Focus Group Discussion: Telehealth (private)

Venue: Kecapi 7 Room

Tuesday, Oct 18 13:00-15:15

Topic: Telehealth

Moderator: Prof. Heru Suhartanto

Focus Group Discussion: IoT (private)

Venue: Kecapi 7 Room

Tuesday, Oct 18 15:15-18:00

Topic: IoT

Moderator: Bayu Anggoro Jati, Ph.D

**Keynote Speech I** 

Venue: Kecapi 6 Room

Wednesday, Oct 19

09:00-09:30

Speaker: Prof. Tapio Salakoski, University of Turku, Finland

Moderator: Dr. Ade Azurat

**Keynote Speech II** 

Venue: Kecapi 6 Room

Wednesday, Oct 19

09:30-10:00

Speaker: Prof. Dr. Xue Li, University of Queensland, Australia

Moderator: Prof. Heru Suhartanto

**Keynote Speech III** 

Venue: Kecapi 6 Room

Wednesday, Oct 19

10:00-10:30

Speaker: Dr. Nico Neumann, University of South Australia, Australia

Moderator: Prof. Heru Suhartanto

Parallel Session I
Information Security
Venue: Kecapi 1 Room

Wednesday, Oct 19 11:00-12:00

#### **Session Chair:**

- Bayu Anggoro Jati, Ph.D
- Yulistian Wardhana, M.Kom.

#### (498) Design DDoS Attack Detector using NTOPNG

Grafika Jati, Budi Hartadi, Akmal Gafar Putra, Fahri Nurul, M. Riza Iqbal, Setiadi Yazid, Aprinaldi Jasa Mantau

#### (510) Recommender System for Product Offering by Personalized Email

Alexander A. S. Gunawan, Tania, Derwin Suhartono

### (518) Comparative Study of Lightweight Secure Multiroute Communication System in Low Cost Wireless Sensor Network for CO 2 Monitoring

Novian Habibie, Rindra Wiska, Aditya Murda Nugraha, Wisnu Jatmiko, Setiadi Yazid, M. Hafizhuddin Hilman

### (528) Big Sensor-Generated Data Streaming Using Spark for Data Storage and Regression in Wireless Sensor Network for CO2 Monitoring

Rindra Wiska, Novian Habibie, Wisnu Jatmiko, M. Febrian Rachmadi, W. Satyo Nugroho, Petrus Mursanto, D. Hikmat Ramdhan

Parallel Session II Wednesday, Oct 19
Big Data 11:00-12:00

Venue: Kecapi 2 Room

#### **Session Chair:**

- Dr. Eng. Adi Wibowo
- Yova Ruldeviyani, M. Kom.

### (530) Generalized Learning Vector Quantization Particle Swarm Optimization (GLVQ-PSO) FPGA Implementation for Real-Time Electrocardiogram

Yulistiyan Wardhana, D. Made Sri Arsa, Wisnu Jatmiko, Andreas Febrian

#### (525) Design of Intelligent K-Means Based on Spark for Big Data Clustering

Ilham Kusuma, M. Aanwar Ma'sum, Wisnu Jatmiko, Heru Suhartanto, M. Febrian Rachmadi

#### (531) Adaptive Range in FIMT-DD Tree for Large Data Streams

Hanif Arief Wisesa, M. Anwar Ma'sum, Ari Wibisono, Wisnu Jatmiko, M. Hafizhuddin Hilman

Keynote Speech IVWednesday, Oct 19Venue: Kecapi 6 Room13:00-13:30

Speaker: Dr. Huang Ye-Nun, Academia Sinica, Taiwan

Moderator: Dr. Setiadi Yazid

#### ADVANCED PROGRAM

Keynote Speech VWednesday, Oct 19Venue: Kecapi 6 Room13:30-14:00

Speaker: Dr. Jun Zhang, Deakin University, Australia

Moderator: Ari Saptawijaya, Ph.D

Keynote Speech VIWednesday, Oct 19Venue: Kecapi 6 Room14:00-14:30

Speaker: Dr. Eng. Wisnu Jatmiko, Universitas Indonesia

Moderator: Ari Saptawijaya, Ph.D

Parallel Session III

Big Data

Venue: Kecapi 1 Room

Wednesday, Oct 19
14:30-15:30

#### **Session Chair:**

- Bayu Anggoro Jati, Ph.D
- Yulistian Wardhana, M.Kom.

(535) Parallel Rules Based Classifier using DNA Strand Displacement for Multiple Molecular Markers Detection Adi Wibowo, Satriyo Adhy, Retno Kusumaningrum, Helmie Arif Wibawa, Kosuke Sekiyama

(536) Big Data Compression using SPIHT in Hadoop: A Case Study in Multi-Lead ECG Signals Grafika Jati, Ilham Kusuma, Wisnu Jatmiko, M. Hafizhuddin Hilman

#### (400) Data Warehouse Design and Implementation of Merchant Acquirer

Yova Ruldeviyani, Bofandra Muhammad

Parallel Session IV

Big Data

Venue: Kecapi 2 Room

Wednesday, Oct 19
14:30-15:30

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#### **Session Chair:**

- Dr. Eng. Adi Wibowo
- Yova Ruldeviyani, M. Kom.

#### (493) Predicting the Status of Water Pumps Using Data Mining Approach

Darmatasia, A. Murni Arymurthy

#### (508) Dimensionality Reduction using Deep Belief Network in Big Data

D. Made Sri Arsa, Grafika Jati, Aprinaldi Jasa Mantau, Ito Wasito

# (524) Spatial Data Mining for Predicting of Unobserved Zinc Pollutant using Ordinary Point Kriging Alexander A. S. Gunawan, Annisa Nur Falah, Alfensi Faruk, Destiny S. Lutero. Budi Nurani Ruchjana, Atje

Setiawan Abdullah

### **(507) A Survey of Whole Genome Alignment Tools and Frameworks based on Hadoop MapReduce** Sumarsih C. Purbarani, Yulistiyan Wardhana, Aprinaldi Jasa Mantau

**Parallel Session V** 

Big Data

Wednesday, Oct 19 16:00-17:00

Venue: Kecapi 1 Room

#### **Session Chair:**

- Bayu Anggoro Jati, Ph.D
- Yulistian Wardhana, M.Kom.

#### (534) Enhanced Tele ECG System Using Hadoop Framework to Deal With Big Data Processing

M. A. Ma'sum, Wisnu Jatmiko, Heru Suhartanto, M. Febrian Rachmadi

#### (533) Processing Big Data with Decision Trees

H. Arif Wisesa, M. Anwar Ma'sum, Wisnu Jatmiko, Andreas Febrian

#### (430) The Application of Big Data using MongoDB: Case Study with SCeLE Fasilkom UI Forum Data

Argianto Rahartomo, Rizal Fathoni Aji, Yova Rudelviyani

### (397) Enhancing Query Performance of Library Information Systems using NoSQL DBMS: Case Study on Library Information Systems of Universitas Indonesia

Yova Ruldeviyani, Hermansyah, Rizal Fathoni Aji

**Closing Ceremony** 

Wednesday, Oct 19

Venue: Kecapi 6 Room

17:00-18:00

Closing Remarks by Prof. Heru Suhartanto

### **PRESENTER'S SCHEDULE**

### Α

Alexander A. S. Gunawan						
Recommender System for Product Offering by Personalized Email						
Kecapi 1	Parallel Session I	Oct 19 (Wed)	Presenter 1			
	11.15-11.30					
Spatial Data Minin	Spatial Data Mining for Predicting of Unobserved Zinc Pollutant using Ordinary Point Kriging					
Kecapi 2	Parallel Session II	Oct 19 (Wed)	Presenter 1			
	15.00-15.15					

Adi Wibowo						
Parallel Rules Based Classifier using DNA Strand Displacement for Multiple Molecular Markers  Detection						
Kecapi 1						
	14.45-15.00					

Ardian Hosen					
Aggregation of Open Data Information using Linked Data: Case Study Education and Job Vacancy Data in Jakarta					
Kecapi 1 Parallel Session V Oct 19 (Wed) Presenter 1 16.30-16.45					

Argianto Rahartomo				
The Application of Big Data using MongoDB: Case Study with SCeLE Fasilkom UI Forum Data				
Kecapi 2	Parallel Session II	Oct 19 (Wed)	Presenter 1	
	11.30-11.45			

Darmatasia Palehai					
Predicting the Status of Water Pumps Using Data Mining Approach					
Kecapi 2	Parallel Session IV	Oct 19 (Wed)	Presenter 2		
	14.30-14.45				

Dewa Made Sri Arsa				
Knowledge Representation System for Copula Sentence in Bahasa Indonesia Based on Web				
Ontology Language (OWL)				
Kecapi 2	Parallel Session IV	Oct 19 (Wed)	Presenter 3	
	14.45-15.00			

# G

Grafika Jati					
Design DDoS Attack Detector using NTOPNG					
Kecapi 1	Parallel Session I 11.00-11.15	Oct 19 (Wed)	Presenter 2		
Big Data Comp	Big Data Compression using SPIHT in Hadoop: A Case Study in Multi-Lead ECG Signals				
Kecapi 1	Parallel Session III	Oct 19 (Wed)	Presenter 2		
	15.00-15.15				

# H

Hanif Arief Wisesa						
Adaptive Range in FIMT-DD Tree for Large Data Streams						
Kecapi 1	Parallel Session III	Oct 19 (Wed)	Presenter 3			
	14.30-14.45					
	Processing Big Data with Decision Trees					
Kecapi 1	Parallel Session V	Oct 19 (Wed)	Presenter 2			
	16.15-16.30					

Ilham Kusuma					
Design of Intelligent K-Means Based on Spark for Big Data Clustering					
Kecapi 2	Parallel Session 2	Oct 19 (Wed)	Presenter 2		
	11.15-11.30				

# M

M. Anwar Ma'sum				
Enhanced Tele ECG System Using Hadoop Framework To Deal With Big Data Processing				
Kecapi 1	Parallel Session V	Oct 19 (Wed)	Presenter 3	
	16.00-16.15			

# N

Novian Habibie				
Comparative Study of Lightweight Secure Multiroute Communication System in Low Cost Wireless Sensor Network for CO 2 Monitoring				
Kecapi 1	Parallel Session I	Oct 19 (Wed)	Presenter 3	
	11.30-11.45			

# R

Rindra Wiska				
Big Sensor-Generated Data Streaming Using Spark for Data Storage and Regression in Wireless Sensor Network for CO2 Monitoring				
Kecapi 1	Parallel Session I 11.45-12.00	Oct 19 (Wed)	Presenter 4	

# S

Sumarsih Condroayu Purbarani				
A Survey of Whole Genome Alignment Tools and Frameworks based on Hadoop MapReduce				
Kecapi 2	Parallel Session IV	Oct 19 (Wed)	Presenter 4	
	15.15-15.30			



Yova Ruldeviyani					
Design And Implementation Of Merchant Acquirer Data Warehouse at PT. XYZ					
Kecapi 1	Parallel Session III	Oct 19 (Wed)	Presenter 4		
	15.15-15.30				
Enhancing Query Performance of Library Information Systems using NoSQL DBMS: Case Study on					
Library Information Systems of Universitas Indonesia					
Kecapi 1	Parallel Session V	Oct 19 (Wed)	Presenter 4		
	16.45-17.00				

Yulistiyan Wardhana				
Generalized Learning Vector Quantization Particle Swarm Optimization (GLVQ-PSO) FPGA Implementation for Real-Time Electrocardiogram				
Kecapi 2	Parallel Session II 11.00-11.15	Oct 19 (Wed)	Presenter 3	

