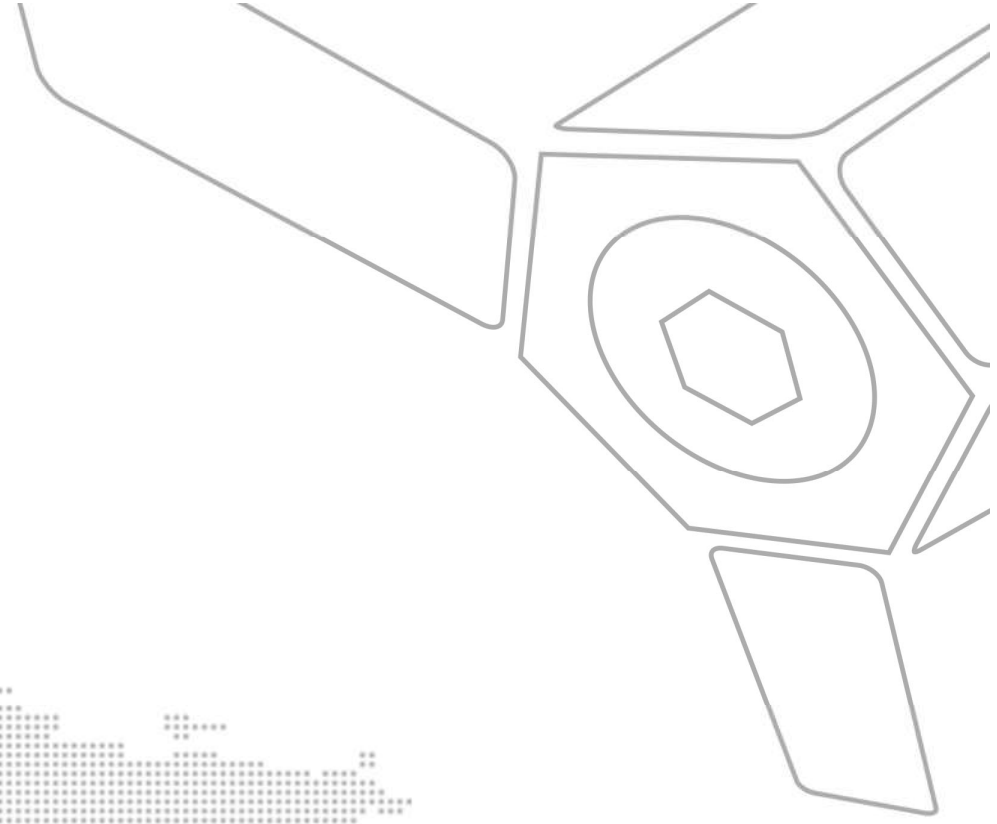


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# PROCEEDING

## International Symposium on Geoinformatics 2016

October 18<sup>th</sup> 2016, Brawijaya University  
Malang East Java, Indonesia





# International Symposium on Geoinformatics (ISyG) 2016

Brawijaya University, Malang, Indonesia  
October 18<sup>th</sup>, 2016

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## **Welcome Message from the General Chairs of ISyG 2016**

Greetings!

On behalf of the Organizing Committee, we would like to welcome you all to the International Symposium on Geoinformatics (ISyG) 2016. This second ISyG 2016 is held in Brawijaya University, Malang - Indonesia. Malang has long become the center of tourist destination in East Java.

This ISyG 2016 on October 18<sup>th</sup>, is organized by Faculty of Computer Science of Brawijaya University, which formerly knowns as Program of Information Technology and Computer Science (PTIIK).

ISyG 2016 has brought together academics, researchers, practitioners from across countries, reviewed by experts on geoinformatics that results in ten authors. Moreover, some rigorous preparation have been made to present some leading keynote speakers that will gratify academic and scientific atmosphere.

We are honored to have Professor Dr. Qingwu Hu from Wuhan University and Professor Stephan Winter from The University of Melbourne as keynote speakers.

With all these invited speakers and authors, we do hope that this second ISyG can offers meaningful insights that will contribute to the betterment of geoinformatics research and application. We also warmly invite you to experience the greatness of Bromo Volcano and Batu Tour City. Last but not least, please enjoy your stay in Malang.

Enjoy Malang and our conference!

Sincerely yours,

**Budi Darma Setiawan, S.Kom, M.Cs**  
ISyG 2016 General Chair

## **Welcome Message from the Dean of Faculty of Computer Science Brawijaya University**

On behalf of all the academic staff and students of the Faculty of Computer Science, Brawijaya University, I would like to extend our warmest welcome all the participants to the Brawijaya University on the occasion of the International Symposium on Geoinformatics (ISyG) 2016.

I believe that ISyG 2016 will play an important role in encouraging activities in research, development, and applications of computer science and geo information technology in Indonesia, and give an excellent opportunity to forge collaborations between universities, research institutions, and companies for the development of computer science & information technology especially in Geoinformatics field both within the country and with international partners.

International Symposium on Geoinformatics emphasizes the confluence of two rapidly advancing domains: Computer Science and Geographic Information Science; nowadays, Earth studies using more and more sophisticated computing theory and tools, and computer processing of Earth observations through Geographic Information System (GIS) attracts a great deal of attention from governmental, industrial and research worlds.

The broad scope of this event, which includes both theoretical aspects of computer science and practical, applied experience of developing information systems, provides a unique meeting ground for researchers spanning the whole spectrum of our discipline. I hope that over the day, some fruitful collaborations can be established.

I would like to express my sincere gratitude to the distinguished invited speakers for their presence and contributions to the conference. I also thank all the program committee members for their efforts in ensuring a rigorous review process to select high quality papers.

Finally, I sincerely hope that all the participants will get benefit from the technical contents of this conference, and wish you a very successful conference and an enjoyable stay in Malang, East Java, Indonesia.

Sincerely,

**Wayan Firdaus Mahmudy, S.Si, M.T, Ph.D**  
Dean of the Faculty of Computer Science  
Brawijaya University

## Program at Glance

Date : October 18<sup>th</sup> 2016

Venue : Widyaloka Building, Brawijaya University

TIME	AGENDA	ROOM
08.00-09.00	Registration	Registration Desk
09.00-09.15	Speech from Chairman of ISYG	Main Auditorium
09.15-09.30	Speech from Dean of Computer Science Faculty	Main Auditorium
09.30-09.45	Opening Ceremonial with Traditional Dance	Main Auditorium
09.45-10.00	Coffee Break	Main Auditorium
10.00-11.00	Keynote Speaker 1 Presentation Professor Dr. Qingwu Hu (Wuhan University)	Main Auditorium
11.00-12.00	Keynote Speaker 2 Presentation Professor Stephan Winter (The University of Melbourne)	Main Auditorium
12.00-13.00	Lunch Break	Banquet Hall
13.00-15.00	Serial Session  1. Mobile GPS-Augmented Reality System for Tour Guide (Case Study: Kediri City) <i>Author: Kholid Fathoni, Yuliana Setiowati, Fadilah Fahrul, Anggar Sari</i>  2. 3D Visualization of Global Warming Learning using Augmented Reality <i>Author: Kholid Fathoni, Jauari Akhmad Nur Hasim, Choirul Fadholani, Rizky Yuniar Hakkun, Rengga Asmara</i>  3. Optimization Equitable Distributions of Teachers Based On Geographic Location using General Series Time Variant PSO <i>Author: Imam Cholissodin, Risda Amalia Khusna, Randy Cahya Wihandika</i>  4. Ambulance Management System using Web GIS for Determine Optimal Route of Emergency Rescue Based on Geospatial Data, GPS Technology and Shortest Path Algorithm. <i>Author: Ika Qutsiati Utami, Satrio Agung W., Fatwa Ramdani</i>	Main Auditorium
13.00-15.00	Poster Session  1. Implementation Of Web-GIS For Mapping Sugarcane Land: Case Study of Pabrik Gula Kreet Baru Malang <i>Author: Ryan Haris Raharjo, Ismiarta Aknuranda, Fatwa Ramdani</i>	Hall

TIME	AGENDA	ROOM
	<p>2. Web GIS for Building Calculation and Urban Land Use Analysis Tools in Malang City with 3 Dimensions Visualization <i>Author: Randi Dwi Nandra, Ismiarta Aknuranda, Fatwa Ramdani</i></p> <p>3. Analysis and Design of Population Density Geographic Information System with Heat Map Method <i>Author: Lia Hasanah, Ismiarta Aknuranda, Fatwa Ramdani</i></p> <p>4. Implementation of Web-GIS for Monitoring Environmental Changes Resulting from Expansion Iron Sand Mining In Lumajang <i>Author: Gilrandy Hardinadhir Zakirin, Suprpto, Fatwa Ramdani</i></p> <p>5. The Mapping of Electricity Distribution by using Geographical Information System in Blawan Ijen Area <i>Author: Agung Herdianto, Teguh Harijanto, Widya Utama</i></p>	
15.00-16.00	Closing Ceremony and Announcement	Main Auditorium