Journal of ICT Research and Applications

Journal of ICT Research and Applications welcomes full research articles in the area of Information and Communication Technology from the following subject areas: Theory, Signal Processing, Electronics, Computer Network, Telecommunication, Wireless & Mobile Computing, Internet Technology, Multimedia, Software Engineering, Computer Science, Information System, and Knowledge Management. Authors are invited to submit articles that have not been published previously and are not under consideration elsewhere.

Abstracts and articles published on *Journal of ICT Research and Applications* are available online at http://journal.itb.ac.id and indexed by Scopus, Google Scholar, DOAJ, EBSCO Open Science Directory, Electronic Library University of Regensburg, Open J-Gate, New Jour, International Association for Media and Communication Research (IAMCR), Cabell's Directories, Zurich Open Repository and Archive Journal Database, and ISJD-Indonesian Institute of Sciences.

Publication History

Formerly known as:

• ITB Journal of Information and Communication Technology (2007 – 2012)

Editorial board of Journal of ICT Research and Applications

Chief Editor	Hendrawan	Rila Mandala	Budi Rahardjo
Ismunandar	School of Electrical	School of Electrical	School of Electrical
Faculty of Mathematics	Engineering and Informatics	Engineering and	Engineering and
and Natural Sciences	ITB, Indonesia	Informatics ITB,	Informatics ITB,
ITB, Indonesia		Indonesia	Indonesia
	Anak Agung Julius		
Editorial Board	Dept. Electrical, Computer	Dugki Min	Andriyan B.
Dwi H. Widyantoro	and Systems Engineering,	School of Computer	Suksmono
(Executive Editor)	Rensselaer Polytechnic	Science and	School of Electrical
School of Electrical	Institute Jonsson	Engineering, Konkuk	Engineering and
Engineering and	Engineering Center, New	University, Korea	Informatics ITB,
Informatics ITB,	York, USA	, , , , , , , , , , , , , , , , , , ,	Indonesia
Indonesia	•	Achmad Munir	
	Armein Z. Langi	School of Electrical	Bambang Riyanto
Hans Dulimarta	School of Electrical	Engineering and	Trilaksono
Grand Valley State	Engineering and Informatics	Informatics ITB,	School of Electrical
University, USA	ITB, Indonesia	Indonesia	Engineering and
3,			Informatics ITB,
Ken Ferens	Leo P. Ligthart	Ayu Purwarianti	Indonesia
University of Manitoba,	International Research	School of Electrical	
Canada	Center on	Engineering and	David Taniar
	Telecommunication and	Informatics ITB,	Clayton School of
	Radar, TU Delft, Netherlands	Indonesia	Information
			Technology Monash
			University, Australia

Publication assistant: Dini Sofiani Permatasari & Yuliah Qotimah. Address: *ITB Journal Publisher*, LPPM ITB, Ged. Rektorat ITB Lt. 5, Jalan Tamansari 64, Bandung 40116, Indonesia, Tel. (022) 2501759 ext. 121, Fax.: (022) 2504010; e-mail: journal@lppm.itb.ac.id.

Distribution: Distributed to other universities and research institutions for exchange publications and to regular subscribers.

Subscription per issue: Rp 100.000,- (domestic) and \$50 (overseas). Order form for subscription should be sent to the editorial office.

Reg. No. 691-SIC-UPPGT-SIT-1963, Accreditation No. 56/DIKTI/Kep/2012 (Juli 2012- Juli 2017)

Published by ITB Journal Publisher, the Institute for Research and Community Services, Institut Teknologi Bandung, in collaboration with Indonesian Engineering Association (Persatuan Insinyur Indonesia - PII).

Cover Design by Chandra Tresnadi.

Table of Contents i

Table of Contents

1.	Implementation of Kadazan Tagger Based on Brill's Method Marylyn Alex & Lailatul Qadri Zakaria	177
2.	Characterization of Series Iteration Log-periodic Fractal Koch Printed Antenna Equipped with Balun Unit Achmad Munir, Dida Tuhu Putranto& Heroe Wijanto	191
3.	A Fast and Efficient Thinning Algorithm for Binary Images Tarik Abu-Ain, Siti Norul Huda Sheikh Abdullah, Bilal Bataineh & Khairuddin Omar	205
4.	Genetic Programming for Medicinal Plant Family Identification System Indra Laksmana, Yeni Herdiyeni & Ervizal A.M. Zuhud	217
5.	A Multiclass-based Classification Strategy for Rhetorical Sentence Categorization from Scientific Papers Dwi H. Widyantoro, Masayu L. Khodra, Bambang Riyanto & E. Aminudin Aziz	235
	Index	iii
	List of Reviewers	vi