

SEMINAR INTERNASIONAL 2

Status	Published
Nama Seminar	10th IEEE International Conference on Awareness Science and Technology (iCAST 2019), Morioka, Japan. 23-25 Oktober 2019
Judul Manuskrip	Classification of Sleep Disorder from Single Lead Non-overlapping of ECG-apnea based Non-Linear Analysis using Ensemble Approach

2. Pengiriman Makalah



Paper 19

You can view the paper below. Modifications to the paper are not allowed.

Paper 19	
Title:	Classification of Sleep Disorder from Single Lead Non-overlapping of ECG-apnea based Non-Linear Analysis using Ensemble Approach
Paper:	paper_19.pdf
Pages:	6
Address:	
Time (GMT):	2019-10-03 11:01
Status:	this paper can be modified by the authors
Checked:	this paper was not yet checked by editors

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3. Makalah Diterima

iCAST 2019 notification for paper 19

iCAST 2019 <icast2019@easychair.org>

Fri 8/30/2019 2:05 PM

To: Iman Fahrudi <iman@polibatam.ac.id>

Dear Author/Authors,

Congratulations!

We are happy to inform you that based on the recommendations of the reviewers and the Technical Program Committee your following paper has been accepted for oral presentation in IEEE iCAST2019 to be held in Morioka, Iwate during 23rd ~25th October, 2019.

Paper No: 19

Title: Classification of Sleep Disorder from Single Lead Non-overlapping of ECG-apnea based Non-Linear Analysis using Ensemble Approach

Authors: Iman Fahrudi

The review comments are attached for your reference in order to prepare camera ready version of your paper. The instructions for camera-ready paper submission and registration will be sent by another email.

Best regards

PC Chairs of IEEE iCAST2019

SUBMISSION: 19

TITLE: Classification of Sleep Disorder from Single Lead Non-overlapping of ECG-apnea based Non-Linear Analysis using Ensemble Approach

4. Perbaikan Makalah

TITLE: Classification of Sleep Disorder from Single Lead Non-overlapping of ECG-apnea based Non-Linear Analysis using Ensemble Approach
AUTHORS: Iman Fahrudi, I Ketut Eddy Purnama, Hideya Takahashi and Mauridhi Hery Purnomo

----- Overall evaluation -----

SCORE: 2 (accept)

----- TEXT:

A cheaper way of sleep-apnea test is proposed, using ECG data. Several features, based on time, frequency and other non-linear parameters (17 in total are used) for classification. An accuracy of over 94% was achieved. The comments the authors should address are:

- (1) How to tackle the imbalance data should be addressed.
- (2) Feature selection is important. As time and frequency (derivative of time) basically carry similar information, feature selection is necessary. It would probably improve the results too.
- (3) The texts on the bar-charts are blurred and illegible.

----- REVIEW 2 -----

SUBMISSION: 19

TITLE: Classification of Sleep Disorder from Single Lead Non-overlapping of ECG-apnea based Non-Linear Analysis using Ensemble Approach

AUTHORS: Iman Fahrudi, I Ketut Eddy Purnama, Hideya Takahashi and Mauridhi Hery Purnomo

----- Overall evaluation -----

SCORE: 2 (accept)

----- TEXT:

This work developed a computer-based system to diagnose sleep disorders using non-overlapping ECG-apnea from single lead ECG signals.

Some suggestions are given below.

1. A paragraph described the organization of the paper should be provided in Section I.
2. There are too many references. The authors are suggested to discard some unnecessary and out-of-date references, such as those only showed once in the manuscript, such as [14], [22].

TITLE: Classification of Sleep Disorder from Single Lead Non-overlapping of ECG-apnea based Non-Linear Analysis using Ensemble Approach
AUTHORS: Iman Fahrudi, Ketut Eddy Purnama, Hideya Takahashi and Maundi Hery Purnomo

----- Overall evaluation -----

SCORE: 2 (accept)

----- TEXT:

This paper presents an analysis method to classify sleep disorder apnea from non-apnea by low cost single lead ECG. The paper is well written and the findings are interesting. However the following points need to be taken care of.

- 1) The line "The classification of non-overlapping ...an ensemble approach" needs correction
- 2) In section 2b, feature extraction, time parameters (again the symbol "b" is used), need some explanation. What is meant by RR, RMSSD and TINN?
- 3) The coordinates of Fig 6, 7 and 8 are illegible.
- 4) In fig 5, all the feature sets are written as feature set1

----- REVIEW 4 -----

SUBMISSION: 19

TITLE: Classification of Sleep Disorder from Single Lead Non-overlapping of ECG-apnea based Non-Linear Analysis using Ensemble Approach
AUTHORS: Iman Fahrudi, Ketut Eddy Purnama, Hideya Takahashi and Maundi Hery Purnomo

----- Overall evaluation -----

SCORE: 1 (weak accept)

----- TEXT:

1. This study developed a computerized sleep diagnosis application to help experts classify symptoms by using ensembling method from QRS morphological, time-frequency characteristics, and nonlinear analysis from single-lead ECG recordings.
2. Fig. 9 intended to show the performance of ensemble learning approach. But it seems that 94.7% accuracy was obtained from Boosted tree classifier shown in Fig. 5. So, what is the accuracy from ensembling approach?

ICAST 2019 notification for paper 19

ICAST 2019 <icast2019@easychair.org>
Fri 6/20/2019 2:03 PM

To: Iman Fahrudi <iman@polstatem.ac.id>

Dear Author/Authors,

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Author: Iman Fahrudi

The review comments are attached for your reference in order to prepare camera ready version of your paper. The instructions for camera-ready paper submission and registration will be sent by another email.

Best regards
PC Chairs of IEEE ICAST2019

5. Bukti Terbit

The screenshot shows a search results page on IEEE Xplore. The search criteria are: Author: Iman Fahrudi, Ketut Eddy Purnama, Hideya Takahashi, Maundi Hery Purnomo. The results list four papers:

- 1. An Application Real-time Acquiring EEG Signal from Single Lead Electrode to Recognize Brain Activity using Neurosky Sensor (2019 International Seminar on Application for Technology of Information and Communication (ISemantic))
- 2. An Investigation of Dynamic Features Influence in ECG-Apnea Using Detrended Fluctuation Analysis (2018 International Conference on Intelligent Autonomous Systems (ICIAS))
- 3. Screening of Non-overlapping Apnea and Non-apnea from Single Lead ECG-apnea Recordings using Time-Frequency Approach (2019 International Conference on Computer Engineering, Network, and Intelligent Multimedia (CENIM))
- 4. Classification of Sleep Disorder from Single Lead Non-overlapping of ECG-apnea based Non-Linear Analysis using Ensemble Approach (2019 IEEE 10th International Conference on Awareness Science and Technology (ICAST))

The fourth result is highlighted with a red box. On the right side of the page, there are promotional banners for IEEE DataPort, IEEE Full-Text, and a Feedback button.



**The 10th IEEE International Conference on Awareness Science and
Technology (iCAST 2019)
October 23-25, Morioka, Japan
Proceedings**

Sponsor:

Japan Chapter of IEEE Systems, Man and Cybernetics Society (SMCS).

Supporters:

Iwate Prefectural University, Japan,
IEEE SMCS Technical Committee on Awareness Computing,
IEEE CIS Task Force on Awareness Computing,
IEEE Sendai Section,
IEEE Society on Social Implications of Technology (SSIT).



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6. Makalah dibagian Lampiran