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STADIUS
Center for Dynamical Systems, Signal Processing and Data Analytics

STADIUS Newsletter

February 2023

AWARDS ▪ EVENTS ▪ STAFF UPDATE ▪ PUBLICATIONS

Welcome to February edition of the STADIUS Newsletter

Awards



EURASIP Group Technical Achievement Award for Sabine Van Huffel

We are very happy to share the news that Sabine Van Huffel received the EURASIP Group Technical Achievement Award "for establishing one of the leading European research groups in biomedical signal processing".

EURASIP Early Career Award for Alexander Bertrand

We are also very proud to announce another EURASIP Award for STADIUS member: Alexander Bertrand received EURASIP Early Career Award "for contributions to signal



processing for EEG, neuro-steered hearing prostheses, and neural implants".

Both EURASIP Awards will be presented at the 31st European Signal Processing Conference, **EUSIPCO 2023.** The conference takes place from 4 till 8 September 2023 in Helsinki.
If you want to know more about EURASIP and EURASIP Awards, please visit the website: https://eurasip.org/awards/.

News



AAAI Innovative Application of Artificial Intelligence Award for Martijn Oldenhof

The MELLODDY paper 'Industry-Scale Orchestrated Federated Learning for Drug Discovery' was recognised by AAAI with the 'Innovative Application of Artificial Intelligence Award'. The paper was presented at the 35th Annual Conference on Innovative Applications of Artificial Intelligence (IAAI-23 7-14 Feb '23) in Washington DC, USA

More information on the awards

Read the paper

or discover it in the supporting **YouTube video**



VAIA news - spotify

VAIA, the Flanders AI Academy sponsored Nerdland Podcast in January. Do you understand Dutch? Catch the *sponsorbabbel* at 02.20.15!

Nerdland Podcast January



IMAGINARY – Splendor and power of mathematics

From 27.02.2023 till 26.03.2023 at University Library in Leuven, you have the chance to visit the IMAGINARY exhibition. The exhibition reveals stunning applications of mathematics, including images in video games, plastic transportation in the ocean and black holes in cosmology. At IMAGINARY you will be able to admire 3 sculptures by **Joos Vandewalle,** STADIUS Emeritus Professor and also the former **head of our division.**
You will also find there a poster on "big data analysis" by **Lieven De Lathauwer** & Nele Moelans.

IMAGINARY is organised by the Flanders Platform for Mathematics and the Dutch Platform for Mathematics in collaboration with the Flemish and Dutch universities.

Read More

Events @ STADIUS

Algorithm development for neonatal brain signals
When: **03/03/2023, 10:00 - 11:00**
Where: **B00.35**
By: **Tim Hermans**

A Framework for a Data Quality Module in Decision Support Systems: an application with Smart Grid Time series
When: **21/03/2023, 14:00 - 15:30**
Where: **B91.200**
By: **Giulia Rinaldi**

INSPiRE-MED Seminar
When: **23/03/2023, 15:00 - 16:30**
Where: **B91.200**
By: **Mladen Rakic**

STADIUS Seminar about spinoff

For more information about STADIUS events please visit the STADIUS Event webpages.

Don't forget to check the website of VAIA for a wide choice in courses on (aspects of) AI: www.vaia.be

When: **3/05/2023, 14:00 - 15:30**

Where: **Aula Thermotechnisch Instituut**

By: **Marc Claesen**

We wish the best of luck to the researchers who are leaving STADIUS

Best of luck!

- **Edward De Brouwer**, a researcher from the group of Yves Moreau has left STADIUS on the beginning of February. In March he starts his new research career at Yale University in the lab of prof. Smita Krishnaswamy.

Publication Digest

Here's the monthly STADIUS Publications Digest, including new reports that have been added to the publications database.
Please remember to have your own reports added in the publications database and make sure your entries are kept up to date (status submitted/accepted/published) at all times.

Contact Ida for new additions and updates, do not add/update database content yourself.

23-21
Pandey A., Meulemeester H. D., Moor B. D., Suykens J. A. K., "Multi-view Kernel PCA for Time series Forecasting", Technical Report 23-21, ESAT-STADIUS, KU Leuven (Leuven, Belgium), 2023.

23-22
Achten S., Tonin F., Patrinos P., Suykens J. A. K., "Semi-Supervised Classification with Graph Convolutional Kernel Machines", Technical Report 23-22, ESAT-STADIUS, KU Leuven (Leuven, Belgium), 2023.

23-23
Scheltjens V., Lyse Naomi W. M., Verbeke W., De Moor B., "Client Recruitment for Federated Learning in ICU Length of Stay Prediction", Technical Report 23-23, ESAT-STADIUS, KU Leuven (Leuven, Belgium), 2023.

23-24
Chatzichristos C., Swinnen L., Macea J., Bhagubai M., Van Paesschen W., Maarten De Vos M., "Multimodal detection of typical absence seizures in home environment with wearable electrodes", *Frontiers in Signal Processing*, Rising stars in Biomedical Signal Processing, vol. 2, Oct. 2022, pp. 1-11.
Lirias number: 4067008.

23-25
Chatzichristos C., Dan J., Mundanad Narayanan A., Seeuws N., Vandecasteele K., De Vos M., Bertrand A., Van Huffel S., "Epileptic Seizure Detection in EEG via Fusion

of Multi-View Attention-Gated U-Net Deep Neural Networks", in *Proc. of the IEEE Signal Processing in Medicine and Biology Symposium (SPMB)*, Philadelphia, Pennsylvania, Dec. 2020, pp. 1-11.
Lirias number: 3245926.

23-26

Zhang J., Swinnen L., Chatzichristos C., Broux V., Proost R., Jansen K., Mahler B., Zabler N., Epitashvilli N., Duempelmann M., Schulze-Bonhage A., Schriewer E., Ermis U., Wolking S., Linke F., Weber Y., Symmonds M., Sen A., Biondi A., Richardson M., Sulaiman I A., Silva A., Sales F., VÃ©rtes G., Van Paesschen W., De Vos M., "Multimodal wearable EEG EMG and accelerometry measurements improve the accuracy of tonic-clonic seizure detection", Technical Report 23-26, ESAT-STADIUS, KU Leuven (Leuven, Belgium), 2023.

23-27

Allamaa J.P., Patrinos P., Van der Auweraer H., Son T.D, "Safety Envelope for Orthogonal Collocation Methods in Embedded Optimal Control", Technical Report 23-27, ESAT-STADIUS, KU Leuven (Leuven, Belgium), 2023.

23-28

Musluoglu C. A., Hovine C., Bertrand A., "A Distributed Adaptive Signal Fusion Framework for Spatial Filtering within a Wireless Sensor Network",*42nd WIC Symposium on Information Theory and Signal Processing in the Benelux (SITB 2022)*, Louvain-la-Neuve, Belgium, Jun. 2022, 104 p.
Lirias number: 4067014.

23-29

Heremans E. R. M., Osselaer T., Seeuws N., Phan H., Testelmans D., De Vos M., "Data augmentation in semi-supervised adversarial domain adaptation for EEG-based sleep staging", in *2022 IEEE-EMBS International Conference on Biomedical and Health Informatics (BHI)*, Ioannina, Greece, Sep. 2022, pp. 1-4.
Lirias number: 4030098.

23-30

De Moor B., De Vos M., Vens C., Nowe A., Heyman R., "Artificiele intelligentie : een nieuwe systeemtechnologie, ook in Vlaanderen", *Vlaams Tijdschrift voor Overheidsmanagement*, vol. 4, 2022, pp. 35-47.
Lirias number: 4067014.

23-31

Van Belle H., Vandewalle J., "Simple derivation of Kirchhoff's laws and analogous laws from symmeties", *IEEE Circuits and systems magazine*, 2022, pp. 49-57.
Lirias number: 4068105.

23-32

Hendrikx S., Sorensen M., De Lathauwer L., "Multilinear singular value decomposition of a tensor with fibers observed along one mode", Technical Report 23-32, ESAT-STADIUS, KU Leuven (Leuven, Belgium), 2023.

23-33

Tonin F., Tao Q., Patrinos P., Suykens J.A.K., "Deep Kernel Principal Component Analysis for Multi-level Feature Learning", Technical Report 23-33, ESAT-STADIUS, KU Leuven (Leuven, Belgium), 2023.

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