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STADIUS
Center for Dynamical Systems, Signal Processing and Data Analytics

STADIUS Newsletter

May 2022

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Welcome

Welcome to the May edition of the STADIUS Newsletter!

In June we have organised one more STADIUS-wide Seminar aimed at all STADIUS researchers.
We warmly encourage you to participate!

Time and location: 8/06/2022, 14:30, ESAT, Aula L
Speaker: Lieven De Lathauwer
Title: Tensor methods: an introduction
Abstract: Higher-order tensors come with several new tools for signal processing, data analysis, modelling, machine learning, etc. This seminar is meant as a gentle introduction. At the same time we will comment on the rationale behind Tensorlab (www.tensorlab.net), and the recent release of the repository for reproducible research Tensorlab+ (www.tensorlabplus.net).

News



STADIUS Spinoff ConnexSounds

"This year, the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2022) was pioneering a new event, the Signal Processing Society (SPS) Entrepreneurship Forum. Out of more than 60 start-ups who applied from around the world, CONNEXOUNDS was selected as one of the 6 finalists and therefore had a

chance to pitch in front of the jury members (including investors, various CEOs/CTOs of established companies and the ICASSP organizing Committee) during the 1-day program on 22 May in Singapore.
CONNEXOUNDS is a company established by STADIUS members: Amin Hassani, Giuliano Bernardi, Marc Moonen and Toon van Waterschoot. Its mission is to make the hybrid meetings seamless by allowing participants to only use their personal devices to improve audio during hybrid video meetings. Their contribution lets platforms such as Zoom, Microsoft Teams, and Google Meet be used in such meetings without any extra audio conferencing hardware.

Congratulations Giuliano Bernardi, Amin Hassani, Marc Moonen and Toon van Waterschoot and good luck with your venture!

Events @ STADIUS

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

AI for Time Series: Multi-period financial stress testing: an integrated risk view

Speaker: **Tony Van Gestel** (Dexia)
When**: 2nd June 2022,** 14:30 - 15:30
Where**: Online & Aula van de Tweede Hoofdwet**
An AI for Time Series seminar, collaboration between STADIUS, VAIA & Flanders AI Research

Second-Order Methods with Global Convergence in Convex Optimization.

Speaker: **Nikita Doikov** (Université catholique de Louvain)
When**: 3rd June 2022,** 10:00 - 12:30
Where**: Esat, B91.100**

STADIUS Seminar by Lieven De Lathauwer

Speaker: **Lieven De Lathauwer**
When**: 8th June 2022,** 14:30 - 15:30
Where**: Esat, Aula L**

AI Flanders pre-poster session

When: June 9, 15.00 -17.00
Where: ESAT B01.400

AI for Time Series: Matching Structured Data

Speaker: Romain Tavenard (Université de Rennes 2)

When**: 16th June 2022,** 14:30 - 15:30

Where**: Online & Aula van de Tweede Hoofdwet**

An AI for Time Series seminar, collaboration between

STADIUS, VAIA & Flanders AI Research

AI for Time Series: Semiparametric Time Series Modelling

Speaker: Kurt Barbé (VUB, DWIS en GEWE)

When**: 30th June 2022,** 14:30 - 15:30

Where**: Aula van de Tweede Hoofdwet**

An AI for Time Series seminar, collaboration between

STADIUS, VAIA & Flanders AI Research

New colleagues

A warm welcome to all new researchers and personnel at STADIUS!

At the end of April, a new VAIA colleague joined us @ STADIUS permises.



Hallo, my name is Helga Goossens and I recently joined the VAIA-team. I will give them parttime administrative support. One day of the week I'm also working at the Faculty of Law and Criminology.

Kind regards,

Helga Goossens
Vaia Team

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.

22-42

De Brabandere A. Cao Z. De Vos M. Bertrand A. Davis J., "Semi-supervised change point detection using active learning", Technical Report 22-42, ESAT-STADIUS, KU Leuven (Leuven, Belgium), 2022.

22-43

Vazquez Seisdedos C.M., Valdes Perez F.E., Suarez Leon A.A., Aleman M.N., Van Huffel S., Almeida R., Maranon Reyes E.J., Neto J.E., Limao de Oliveira R.C., Vale do Madeiro J.P., Pouymiro I.R., "Monitorizacion de senales cardiorrespiratorias : hallazgos, metodos y herramientas", *Anales de la Academia de Ciencias de Cuba*, vol. 12, no. 2, May 2022, 9 p.
Lirias number: 3730967.

22-44

Lambrechts D., Wirix-Speetjens R., Maes F., Van Huffel S., "Artificial intelligence based patient-specific preoperative planning algorithm for total knee arthroplasty", *Frontiers in Robotics and AI*, vol. 9, Mar. 2022, 840282 (art.nb) p.
Lirias number: 3711974.

22-45

Evert E., De Lathauwer L., "On best low rank approximation of positive definite tensors", Technical Report 22-45, ESAT-STADIUS, KU Leuven (Leuven, Belgium), 2022.

22-46

Blochberger M., Elvander F., Ali R., Moonen M., Astergaard J., Jensen J., van Waterschoot T., "Distributed Cross-Relation-Based Frequency-Domain Blind System Identification using Online-ADMM", Technical Report 22-46, ESAT-STADIUS, KU Leuven (Leuven, Belgium), 2022.

22-47

Heremans E. R. M., Phan H., Ansari A. H., Buyse B., Testelmans D., De Vos M., "Feature matching as improved transfer learning technique for wearable EEG", Technical Report 22-47, ESAT-STADIUS, KU Leuven (Leuven, Belgium), 2022.

22-48

Heremans E. R. M., Phan H., BorzÃƒÂ©e P., Buyse B., Testelmans D., De Vos M., "From unsupervised to semi-supervised adversarial domain adaptation in EEG-based sleep staging", *Journal of Neural Engineering*, May 2022, 22 p.
Lirias number: 3736700.

22-50

Cakmak B., Dietzen T., Ali R., Naylor P., van Waterschoot T., "A distributed steered response power approach to source localization in wireless acoustic sensor networks", Technical Report 22-50, ESAT-STADIUS, KU Leuven (Leuven, Belgium), 2022.

22-51

Damiano S., van Waterschoot T., "Pyroadacoustics: a Road Acoustics Simulator Based On Variable Length Delay Lines", Technical Report 22-51, ESAT-STADIUS, KU Leuven (Leuven, Belgium), 2022.

22-52

Tao Q., Tonin F., Patrinos P., Suykens J., "Tensor-based Multi-view Spectral Clustering via Shared Latent Space", Technical Report 22-52, ESAT-STADIUS, KU Leuven (Leuven, Belgium), 2022.