From: **STADIUS** aldona.niemiro-sznajder@kuleuven.be
Subject: STADIUS Newsletter October
Date: 29 October 2021 at 16:58
To: stadius@esat.kuleuven.be

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STADIUS
Center for Dynamical Systems, Signal Processing and Data Analytics

STADIUS Newsletter

AWARDS ▪ NEWS ▪ EVENTS ▪ PROJECTS ▪ STAFF UPDATE ▪ PUBLICATIONS



Thank you for participating in the Newcomers Seminar and Reception!
On the STADIUS Wiki you can already find the presentation given by Toon van Waterschoot.
Soon you will find there also the Presentation by the Newcomers (and also some pictures).
https://wiki.esat.kuleuven.be/stadiusintranet/Presentations

Welcome

This month we would like to give a special welcome to the new professors at STADIUS, prof. Tjonnie Li & Mathias Verbeke. Please read their short biography below:

Tjonnie Li



Tjonnie grew up in Hilversum (The Netherlands) where he developed an interest in everything that has to do with space. spent his undergraduate years at the University of Cambridge reading Natural Sciences (Experimental and Theoretical Physic During these years, he was also a Blues volleyball player, awarded the Full Blues status. For his postgraduate studies, Tjonnie returned to The Netherlands to work at the National Institute for Subatomic Physics. Before joining KU Leuven, he a Rubicon Postdoctoral Fellow in the LIGO Laboratory at the California Institute of Technology and taught at The Chinese University of Hong Kong.

Tjonnie's research interests are in all aspects of gravitational-wave physics, including its links to astronomy, the strong-field dynamics of spacetime, ultra-dense matter and cosmology. He was involved in the Nobel Prize-winning detection of gravitatic waves by the Laser Interferometer Gravitational-Wave Observatory (LIGO). His group is actively involved in the operation and scientific output of current generation gravitatic wave detectors, including the US-based LIGO, EU-based Virgo and the Japan-based KAGRA, and is studying the potential of future generation detectors such as the Einstein Telescope an Laser Interferometer Space Antenna (LISA).

Mathias Verbeke



Mathias obtained his PhD degree from KU Leuven in 2014. Sir then, he has been active as Senior Data Scientist at Sirris, the collective research and innovation centre of the Belgian technological industry. In that role, he performed industrial research on advanced data analytics and machine learning, supporting numerous companies in different sectors towards t development of novel data-driven products and services.

In September 2021, Mathias was appointed as Assistant Profe at the Faculty of Engineering Technology. He is affiliated with both the DTAI Section at the Department of Computer Science and the STADIUS division at ESAT, and embedded within the M Group at the Bruges Campus. He focusses on the challenges related to the industrial application of Artificial Intelligence. Hi current research interests are in the area of automated and embedded machine learning, and how techniques from these domains can be married to cope with the lack of data quality, sensitivity to contextual information and the multivariate and multimodal aspects one is often faced with in highly-dynamic resource-constrained industrial settings.

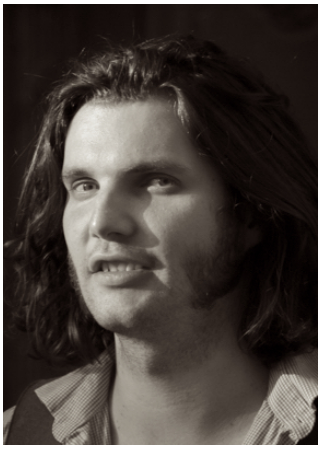
Mathias is also actively involved in the new postgraduate prog on 'Artificial Intelligence in Business and Industry' of which the first edition recently started at Campus KULAK Kortrijk.
You can find Mathias at the Bruges Campus or in office B00.19 when he is working at ESAT.

Awards



Teaching Awards for Toon van Waterschoot

Two teaching awards of the Engineering Technology program at Campus Groep T in academic year 2020/2021 go to Toon van Waterschoot: "Best online lectures" and "Most inspiring professor".
Congratulations!



Best Paper Award at WASPAA for Thomas Dietzen

Thomas Dietzen received the 'Best Acoustic Source Localization Paper Award' at 2021 IE Workshop on Applications of Signal Process to Audio and Acoustics WASPAA 2021, for tl paper entitled: "Low-Complexity Steered Response Power Mapping based on Nyquist Shannon Sampling" co-authored by Enzo De Sena and Toon van Waterschoot.
Congratulations to all the authors!

News

Capricorn Digital Growth Fund (CDGF) extends its board

Capricorn Digital Growth Fund, a Leuven-based **investment fund for data driven start-ups and scale-ups**, has extend its board with Jo De Backer, owner of Niko. Niko, a Belgian producer of domotica best know for its (light) switches, invest 10 million euros in the Capricorn Digital Growth Fund via its o newly founded venture capital fund Aconterra, for smart build technology.
This investment pushes the Capricorn Digital Growth Fund to total available budget of 66 million euros. Their portfolio consi of start and scale-ups such as EclecticIQ, Gradyent and Indigo Chairman of this fund is "our" Prof. Bart De Moor.

More

Events @ STADIUS

STADIUS Seminar by Tjonnie Li

Where: ESAT Aula L

When: 05/11/2021, 16:00 - 17:00

PhD Defense John Morales

Where: Auditorium Arenbergkasteel (Kast 01.07)

When: 15/11/2021, 13:30 - 15:30

STADIUS Data Management Seminar

Where: MTM 00.13

When: 24/11/2021, 14:30 - 16:30

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

New Projects @ STADIUS

Starting in October

- FWO Project: MICADO – Yves Moreau: Multiomic Integration of cell-free DNA profiles to Advance Disease Outcome
- CELSA: Active Learning, in collaboration with Budapest University of Technology and Economics – Yves Moreau: Active learning and interpretation of computational model on tissue specific permeability for stock and virtual drug discovery library
- C1 – Marc Moonen & Toon van Waterschoot: A holistic approach to the design of integra and distributed digital signal processing algorithms for audio and speech communication devices
- IDN - Maarten De Vos: Characterization of brain-brain and brain-body interactions in the context of stress regulation and meditation: New perspectives for the development of biofeedback protocols assisting meditative practice
- COST – Maarten De Vos: (AI-4-NICU) Maximising impact of multidisciplinary research in early diagnosis of neonatal brain injury.
- FWO Junior Postdoctoral Scholarships:
    - Filip Elvander (Toon van Waterschoot): Interpolation, sampling, and uncertainty modeling for acoustic environments
    - Puya Latafat (Panos Patrinos): Efficient Algorithms for Large-Scale Minimax Problems”

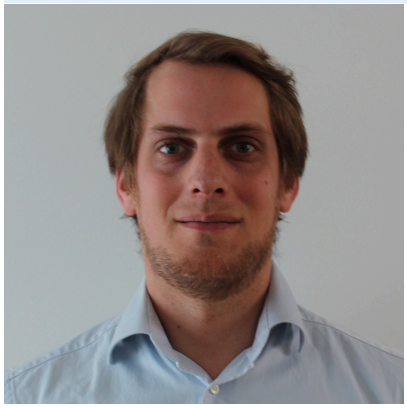
Recently approved FWO Scholarships:

- FWO SB scholarship: Iustina Andronic (prom. Alexander Bertrand)
- FWO SB scholarship: Nicolas Heintz (prom. Alexander Bertrand)
- FWO SB scholarship: Omer Granoviter (prom. Maarten De Vos)
- FWO SB scholarship: Miguel Bhagubai (prom. Maarten De Vos)
- FWO Fundamental scholarship: Brecht Evens (prom. Panos Patrinos)

Congratulations!

New colleagues

A warm welcome to researchers that started STADIUS in Octo



Sonny Achten

Hi All,

I am Sonny Achten, born and raised in Belgium. I obtained a Master of Science in Civil Engineering and a Master of Artificia Intelligence, both at KU Leuven. In between, I have worked a project manager for several construction companies during se years. Very recently, I joined the group of prof. Johan Suykens do my PhD on duality model-based approaches to clustering. When at home, I mostly like playing with my 3.5 and 1 year o daughters.
Looking forward to get to know you all!
Sonny



Kevin Bardool

Hi STADIUS,
My name is Kevin Bardool, and I am excited to join the group Prof. Yves Moreau as a research associate and PhD candidate. will be working on Federated, Multi-task learning and its applications in drug discovery and bioinformatics. I obtained r Master's degree in Machine Learning and Data Mining from Université Jean Monnet in Saint Etienne, France, and a Maste in Artificial Intelligence from KU Leuven. My research interests are in the Neural Nets, Computer Vision and Bioinformatics. Ir my free time I enjoy hiking, reading, and traveling. I look forv to returning to my Alma Mater!

Looking forward to meeting everyone!
Kevin

Hannah Rosa Friesacher



Hi everyone,
My name is Hannah Rosa Friesacher, but everyone just calls m
Rosa. I will do my PhD in the group of Prof. Yves Moreau, whe
will develop machine learning models for the prediction and
uncertainty quantification of small molecule bioactivity. My Phl
position is part of the 'Advanced Machine Learning for Innovat
Drug Discovery (AIDD)' program, funded by the European Uni
within the framework of the Marie-Skłodowska-Curie Actions.
During my PhD, I will work at STADIUS as well as at AstraZen
in Sweden. In my free time I enjoy all kinds of sports, especia
hiking and rock climbing. I also play the violin and I am a big
(classical) music fan. I am looking forward to working with yo
and hope to meet you all very soon!



Bavo Kempen

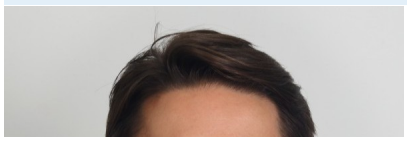
My name is Bavo Kempen and I am doing a PhD titled: "Mode
cerebrovascular autoregulation data to build a patient monitor
supervised by Prof. Bart Depreitere (Experimental Neurosurge
and Neuroanatomy) and Prof. Maarten De Vos (STADIUS). I a
attempting to detect dynamically when and to what extent
cerebrovascular autoregulation is impaired using peripheral
multimodal time series data which were experimentally gathe
from an animal model. Prior to starting my PhD, I obtained tw
Master's degrees at KU Leuven, one in Psychology (Theory an
Research) with a main focus on studying neurocognitive
processes and the other one in Artificial Intelligence specialize
Engineering and Computer Science. During my leisure time I
enjoy doing karate, watching a good movie, or going for a bee
with friends, family and colleagues. I hope I get the opportun
to meet you all soon!
Bavo



Sibren Lagauw

Hi there, I'm Sibren Lagauw and I recently started my PhD un
the supervision of prof. Bart De Moor. My research topic is
situated in the context of the 'Back to the roots' ERC, where I
focus on the misfit-versus-latency system identification
framework. My research interests range from system theory
towards numerical optimization and numerical linear algebra.
much as possible, I spend my free time either in the mountair
love hiking and ski trips) or in the open sea (with a kiteboard
under my feet).

Hope to see you around at STADIUS!
Sibren



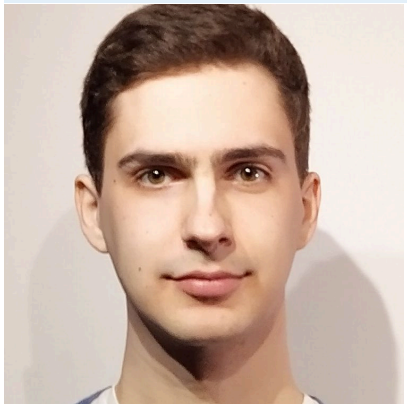
Matthias Maeyens

Hey,
My name is Matthias Maeyens, I just started my PHD under pr



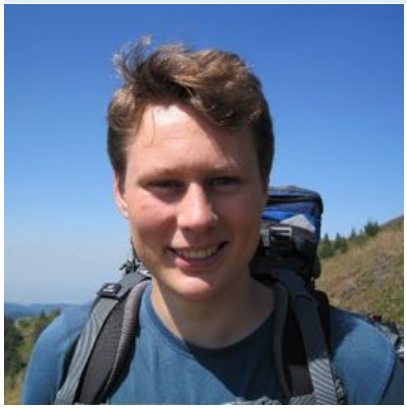
Maarten De Vos. The topic of my PHD is the analysis of multispectral histology images of kidney biopsies, primarily us deep learning methods. Previously I obtained a Master in mathematical engineering as well as a Master in AI. I am from Belgium and I have been living in Antwerp for the past two ye My biggest hobby is rockclimbing either indoors or outdoors, s feel free to hit me up for post work climbing sessions. On holidays I also like to go surfing, hiking or biking. I'm looking forward to getting to know you all a bit better and working together the coming years.

Matthias



Pieter Pas

Hi,
My name is Pieter Pas and I'm doing my PhD in the group of P Panos Patrinos, where I'll be working on the development and implementation of numerical optimization algorithms. I got my Bachelor's and Master's degrees here at KU Leuven, in Electric Engineering and Mathematical Engineering respectively. My m interests are optimization, linear algebra, and programming (primarily in C++). Outside of my research, I enjoy playing th piano, hiking, and tinkering with microcontrollers.
I'm looking forward to getting to know the team here at STADIUS!
Pieter



Lukas Vanpoucke

Hi,
My name is Lukas Vanpoucke and I just started my PhD at STADIUS in the research group of Bart De Moor, on the topic system identification. Last academic year, I obtained my Maste degree in Mathematical Engineering here at KU Leuven. In my spare time, I enjoy sports, mainly handball, running and cyclin Im also a big fan of music and as a guitar player, my favourite genre is of course classic rock.
See you around!

Lukas

Visitors:

- Tizian Wenzel (Johan Suykens)
- Carlos Ruiz Pastor (Johan Suykens)
- Jiani Liu (Johan Suykens)
- Khadijeh Reisi (Maarten De Vos & Sabine Van Huffel)
- Mohammad Khazaei (Maarten De Vos & Sabine Van Huffel)

We wish the best of luck to the researchers who will be leaving STADIUS soon

Best of luck!

Abhijith Mundanad Narayan, Ph.D. researcher from the group of Alexander Bertrand, has defended his Ph.D on 29/09 and will start his new career a new position in Indigo Medical as a D Scientist.

Tina Smets efended her thesis on 19/10 (promotor: Bart De Moor) and will now be pursuing he career in UgenTec, a spinoff company of STADIUS.

Dorien Huysmans after defending her Ph.D. on 21/10 under supervision of Sabine Van Huffel a Carolina Varon, will move to Cochlear, where she will work as research engineer.

Publication Digest

Here's the monthly STADIUS Publications Digest, including new reports that have been added t the publications database.
Please remember to have your own reports added in the publications database and make sure 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.

21-135

Van Rompaey R., Moonen M., "GEVD-based low-rank channel covariance matrix estimat and MMSE channel estimation for uplink cellular massive MIMO systems", Technical Rep 21-135, ESAT-STADIUS, KU Leuven (Leuven, Belgium), 2021..

21-136

Behmandpoor P., Patrinos P., Moonen M., "LEARNING-BASED RESOURCE ALLOCATION WITH DYNAMIC DATA RATE CONSTRAINTS", Technical Report 21-136, ESAT-STADIUS, Leuven (Leuven, Belgium), 2021.

21-137

Ruiz S., van Waterschoot T., Moonen M., "Cascade multi-channel noise reduction and acoustic feedback cancellation", Technical Report 21-137, ESAT-STADIUS, KU Leuven (Leuven, Belgium), 2021.

21-138

Musluoglu C. A., Moonen M., Bertrand A., "Improved tracking for the distributed signal fusion optimization algorithm in a fully-connected wireless sensor network”", Technical Report 21-138, ESAT-STADIUS, KU Leuven (Leuven, Belgium), 2021.

21-140

Smets T., *Manifold learning for visualization, prioritization, and data fusion of Mass Spectrometry Imaging data*, PhD thesis, Faculty of Engineering, KU Leuven (Leuven, Belgium), Oct. 2021, 142 p.
Lirias number: 3480352.

21-141

Theodorakos K., Agudelo M., Espinoza M., De Moor B., "Decomposition-Residuals Neural Networks: Hybrid system identification applied to electricity demand forecasting", Techr Report 21-141, ESAT-STADIUS, KU Leuven (Leuven, Belgium), 2021.

21-142

Hendrikx S., Vervliet N., Bousse M., De Lathauwer L., "Thesis abstract: Tensor-based pattern recognition, data analysis and learning", in *Proc. of BNAIC/BeneLearn 2020*, Leiden, the Netherlands, Nov. 2020, pp. 416-417.
Lirias number: 3613274.

21-143

Chen Y., Hu S.X., Shen X., Ai C., Suykens J.A.K., "Compressing Features for Learning wit Noisy Labels", Technical Report 21-143, ESAT-STADIUS, KU Leuven (Leuven, Belgium), 2021.

21-144

Ferrer M., de Diego M., Hassani A., Moonen M., Pinero G., Gonzalez A., "Multi-channel M tone Active Noise Equalizer with Spatially Distibuted User-selected Profiles", Technical Report 21-144, ESAT-STADIUS, KU Leuven (Leuven, Belgium), 2021.

21-145

Asmare M.H., Woldehanna F., Janssens L., Vanrumste B., "Can heart sound denoising be beneficial in phonocardiogram classification tasks ?", Technical Report 21-145, ESAT-STADIUS, KU Leuven (Leuven, Belgium), 2021. Accepted for publication in *43rd Annual International Conference of the IEEE Engineering in Medicine and Biology*, Guadalajara, Mexico, Nov. 2021.
Lirias number: 3599720.

21-146

Carlier C., Niemeijer K., Mestdagh M., Bauwens M., Vanbrabant P., Geurts L., van Waterschoot T., Kuppens P., "In search of state and trait emotion markers in mobile-sen language : a field study", Technical Report 21-146, ESAT-STADIUS, KU Leuven (Leuven, Belgium), 2021. Accepted for publication in *JMIR Mental Health*.
Lirias number: 3611531.

21-147

Raimondi D., Simm J., Arany A., Moreau Y., "A novel method for data fusion over entity-relation graphs and its application to protein-protein interaction prediction", *Bioinformat* 16, vol. 37, no. 16, Aug. 2021, pp. 2275-2281.
Lirias number: 3612027.



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