

Sabata Gervasio
Lektor
Institut for Medicin og Sundhedsteknologi
Det Sundhedsvidenskabelige Fakultet
Neural Engineering and Neurophysiology
Neural Engineering and Neurophysiology
Neuroboost
Adressestype: Besøgsadresse.
Selma Lagerløfs Vej 249
12-03-018
9260
Gistrup
Danmark
E-mail: saba@hst.aau.dk
Telefon: +4599403743



Forskningsprofil

My research focus is to understand how sensory feedback is processed in normal or pathological situations, and to identify and treat sensory-motor impairments and disorders. I have been working on several projects investigating, for instance, the role of crossed spinal reflexes in interlimb coordination, the use of nociceptive withdrawal reflex in stroke rehabilitation and the effect of neurofeedback on musculoskeletal pain. Recently, I became passionate about methods to improve diagnosis and interventions for children with sensory motor impairments, including Sensory Processing Disorders, Autism Spectrum Disorder (ASD), Attention Deficit Hyperactivity Disorder (ADHD) and Cerebral Palsy. I am currently working on the development of a protocol to identify and assess the mechanism behind sensory processing anomalies in children with ASD and ADHD.

Kvalifikationer

Biomedical Engineering and Science, PhD, Interlimb communication during human walking: crossed responses in the gastrocnemius muscle, Department of Health Science and Technology, Aalborg University, Denmark.

1 okt. 2010 → 1 jan. 2014

Dimissionsdato: 15 aug. 2014

Project management for scientists
maj 2018 → aug. 2018

University Pedagogy
nov. 2014 → jan. 2016

Electronic Engineering, Master of Science, 110/110 summa cum laude, Modeling synaptic noise of spinal motoneurons, Applied Electronics Dept., University Roma TRE
okt. 2007 → maj 2010

Electronic Engineering, Bachelor of Science, Development of Human-Machine Interface: blink detection in eye gaze analysis systems, Applied Electronics Dept., University Roma TRE
okt. 2003 → jul. 2007

Publikationer

Topical capsaicin modulates the two-point discrimination threshold-Modulation depends on stimulation modality and intensity

Frahm, K. S., Andersen, O. K., Arendt-Nielsen, L., Gervasio, S. & Mørch, C. D., nov. 2024, I: European Journal of Pain. 28 , 10, s. 1855-1865 11 s.

A Neurofeedback System to Decrease Chronic Musculoskeletal Pain

Laursen, A. K., Petersen, J. B., Gregersen, K. A., Fleckenstein, M. K., Andreis, F. R., Mrachacz-Kersting, N. & Gervasio, S., 2024, 2024 46th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC). IEEE (Institute of Electrical and Electronics Engineers), 10781549. (Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS).

Differential neural processing of tone frequency oddballs in children with autism spectrum disorder, attention-deficit hyperactivity disorder, and neurotypical children

Mazhari-Jensen, D. S., Liberati, G. & Gervasio, S., 2024.

Influence of skin type and laser wavelength on laser-evoked potentials

Frahm, K. S., Gervasio, S., Arguissain, F. & Mouraux, A., nov. 2023, I: European Journal of Pain. 27, 10, s. 1226-1238 13 s.

EEG signatures of low back and knee joint pain during movement execution: a short report

Gervasio, S., Zarei, A. A. & Mrachacz-Kersting, N., 16 aug. 2023, I: Frontiers in Rehabilitation Sciences. 4, 9 s., 1216069.

Can We Detect Sensory Processing Anomalies in Children with ADHD and ASD Using Electroencephalography?

Mazhari-Jensen, D. S., Frahm, K. S., Lauritsen, M. B., Davies, P., Gavin, W. J. & Gervasio, S., 29 jun. 2023.

Behavioral tendencies, anxiety, and sensory processing: alpha activity at rest and brain responses to visual stimulations

Albano, F., Petrini, L. & Gervasio, S., 2022.

Stimulation modality and noxiousness affects the 2-point discrimination threshold

Frahm, K. S. & Gervasio, S., jun. 2021.

Topical capsaicin modulates the 2-point discrimination threshold – modulation depends on stimulation modality and intensity

Frahm, K. S., Gervasio, S., Arendt-Nielsen, L. & Andersen, O. K., jun. 2021.

The two-point discrimination threshold depends both on the stimulation noxiousness and modality

Frahm, K. S. & Gervasio, S., maj 2021, I: Experimental Brain Research. 239, 5, s. 1439-1449 11 s.

New Insights into Cutaneous Laser Stimulation – Dependency on Skin and Laser Type

Frahm, K. S., Gervasio, S., Arguissain, F. & Mouraux, A., 10 nov. 2020, I: Neuroscience. 448, s. 71-84 14 s.

Exploring the EEG Signatures of Musculoskeletal Pain

Gervasio, S., Hennings, K. & Mrachacz-Kersting, N., 1 jan. 2019, *Converging Clinical and Engineering Research on Neurorehabilitation III: Proceedings of the 4th International Conference on NeuroRehabilitation (ICNR2018), October 16-20, 2018, Pisa, Italy*. Springer Publishing Company, s. 734-738 5 s. (Biosystems and Biorobotics, Bind 21).

Nociceptor activation during cutaneous laser stimulation depends more on skin type and laser wavelength than innervation – insights from a combined experimental and mathematical modelling approach

Frahm, K. S., Gervasio, S., Arguissain, F. & Mouraux, A., 2019.

The influence of skin type and laser wavelength on laser-evoked brain responses: Preliminary results

Arguissain, F., Gervasio, S., Frahm, K. S. & Mouraux, A., 2019.

Delayed muscle onset soreness in the gastrocnemius muscle attenuates the spinal contribution to interlimb communication

Gervasio, S., Finocchietti, S., Stevenson, A. J. T. & Mrachacz-Kersting, N., nov. 2018, I: European Journal of Applied Physiology. 118, 11, s. 2393-2402 10 s.

A novel stimulation paradigm to limit the habituation of the nociceptive withdrawal reflex

Gervasio, S., Laursen, C. B., Andersen, O. K., Hennings, K. & Spaich, E. G., maj 2018, I: IEEE Transactions on Neural Systems and Rehabilitation Engineering. 26, 5, s. 1100-1107 8 s.

Biofeedback for reducing musculoskeletal pain

Mrachacz-Kersting, N. (Opfinder) & Gervasio, S. (Opfinder), 2018, IPC nr. A61B5/04, A61B5/048, A61B5/0482, A61B5/00, Patentnr. WO2018059645, 5 apr. 2018

Evidence for a supraspinal contribution to the human crossed reflex response during human walking
Mrachacz-Kersting, N., Gervasio, S. & Marchand-Pauvert, V., 2018, I: *Frontiers in Human Neuroscience*. 12, 10 s., 260.

Technologically-advanced assessment of upper-limb spasticity: a pilot study
Posteraro, F., Crea, S., Mazzoleni, S., Berteau, M., Ciobanu, I., Vitiello, N., Cempini, M., Gervasio, S. & Mrachacz-Kersting, N., 2018, I: *European Journal of Physical and Rehabilitation Medicine*. 54, 4, s. 536-544 9 s.

Group Ia afferents likely contribute to short-latency interlimb reflexes in the human biceps femoris muscle
Stevenson, A. J. T., Kamavuako, E. N., Geertsen, S. S., Gervasio, S., Farina, D. & Mrachacz-Kersting, N., 21 jul. 2017, *Progress in Motor Control (PMC)* XI. 2 s.

A Brain-Computer-Interface to combat musculoskeletal pain

Mrachacz-Kersting, N., Yao, N., Gervasio, S., Jiang, N., Palsson, T., Graven-Nielsen, T., Falla, D., Dremstrup, K. & Farina, D., 2017, *Brain-Computer-Interface Research – A state of the art summary*. Guger, C., Brendan, A. & Leuthardt, E. (red.). 5 udg. Springer, s. 123-130

Sensory feedback in interlimb coordination: Contralateral afferent contribution to the short-latency crossed response during human walking

Gervasio, S., Voigt, M., Kersting, U. G., Farina, D., Sinkjær, T. & Mrachacz-Kersting, N., 2017, I: *PLOS ONE*. 12, 1, 24 s., e0168557.

Chronic musculoskeletal pain and its effects on brain activation

Ebbesen, B. D., Rasmussen, J., Gervasio, S., Graven-Nielsen, T. & Mrachacz-Kersting, N., 2015, *45th Annual Meeting of the Society for Neuroscience, Neuroscience 2015, 17-21 October 2015, Chicago, IL, USA*. Society for Neuroscience, s. No. 807.27/W1

Motor control and motor learning

Mrachacz-Kersting, N., Stubbs, P. & Gervasio, S., 2015, *Grieve's Modern Musculoskeletal Physiotherapy*. Jull, G., Moore, A., Falla, D., Lewis, J., McCarthy, C. & Sterling, M. (red.). 4 udg. Elsevier, s. 42-52

Novel electrical stimulation paradigm to reduce habituation of the nociceptive withdrawal reflex: Preliminary results

Larsen, C. B., Gervasio, S., Andersen, O. K., Hennings, K. & Spaich, E. G., 2015, *45th Annual Meeting of the Society for Neuroscience, Neuroscience 2015, 17-21 October 2015, Chicago, IL, USA*. Society for Neuroscience, s. No. 268.01/BB74

The effect of crossed reflex responses on dynamic stability during locomotion

Gervasio, S., Kersting, U. G., Farina, D. & Mrachacz-Kersting, N., 2015, I: *Journal of Neurophysiology*. 114, 2, s. 1034-1040

The effect of fatigue on interlimb communication

Gervasio, S., Stevenson, A. J. T. & Mrachacz-Kersting, N., 2015, *45th Annual Meeting of the Society for Neuroscience, Neuroscience 2015, 17-21 October 2015, Chicago, IL, USA*. Society for Neuroscience, s. No. 67.16/N38

Motor control and emerging therapies for improving mobility in patients with spasticity

Gervasio, S., Macleod, C., Esteban-Herreros, E. B., Meng, L. & Tejada, M. C., 1 jan. 2014, *Emerging Therapies in Neurorehabilitation*. Springer, s. 147-169 23 s. (Biosystems and Biorobotics, Bind 4).

Cortical contribution to crossed reflexes in walking humans

Mrachacz-Kersting, N., Gervasio, S., Farina, D. & Sinkjær, T., 2014, *Replace, Repair, Restore, Relieve : Bridging Clinical and Engineering Solutions in Neurorehabilitation: Proceedings of the 2nd International Conference on NeuroRehabilitation, ICNR2014, 24-26 June 2014, Aalborg, Denmark*. Jensen, W., Andersen, O. K. & Akay, M. (red.). Springer, s. 575-583 (Biosystems and Biorobotics; Nr. 7).

Effects of muscle pain on interlimb communication: preliminary results

Gervasio, S., Finocchietti, S. & Mrachacz-Kersting, N., 2014, *Book of Proceedings, ISEK 2014, XX Congress of the International Society of Electrophysiology and Kinesiology, 15-18 July 2014, Rome, Italy*. ISEK

Interlimb communication during human walking: crossed responses in the gastrocnemius muscle
Gervasio, S., 2014, River Publishers. 85 s.

Interlimb communication during human walking: crossed responses in the gastrocnemius muscle
Gervasio, S., 2014

Modeling the functional dependence of stroke patients: the outcome of an improved gait training
Hennings, K., Gervasio, S., Andersen, O. K. & Spaich, E. G., 2014, *Replace, Repair, Restore, Relieve : Bridging Clinical and Engineering Solutions in Neurorehabilitation: Proceedings of the 2nd International Conference on NeuroRehabilitation, ICNR2014, 24-26 June 2014, Aalborg, Denmark*. Jensen, W., Andersen, O. K. & Akay, M. (red.). Springer, s. 421-429 (Biosystems and Biorobotics; Nr. 7).

The effect of crossed responses on dynamic stability
Gervasio, S., Kersting, U. G., Farina, D. & Mrachacz-Kersting, N., 2014.

Contralateral afferent contribution to crossed responses during human locomotion
Gervasio, S., Voigt, M., Kersting, U. G. & Mrachacz-Kersting, N., 2013, *Annual Meeting of the Society for Neuroscience, Neuroscience 2013, 9-13 November 2013, San Diego, CA, USA*. Society for Neuroscience, s. No. 832.13/MM9

Crossed reflex reversal during human locomotion
Gervasio, S., Farina, D., Sinkjær, T. & Mrachacz-Kersting, N., 2013, I: *Journal of Neurophysiology*. 109, 9, s. 2335-2344

Contralateral spinal excitability after unilateral locomotor adaptation
Gervasio, S. & Mrachacz-Kersting, N., 2012, *Proceedings of the XIXth Congress of the International Society of Electrophysiology & Kinesiology, ISEK2012, 19-21 July 2012, Brisbane, Australia*. ISEK, s. 119, No. MOTC_O3.3

Extracting motor modules as a measure of interlimb coordination
Gervasio, S., Gizzi, L., Mrachacz-Kersting, N. & Farina, D., 2012, *Annual Meeting of the Society for Neuroscience, Neuroscience 2012, 13-17 October 2012, New Orleans, LA, USA*. Society for Neuroscience, s. No. 887.20/JJ3

Modeling activation of small cutaneous afferents by electrical stimulation
Frahm, S., Gervasio, S., Grill, W. M., Mørch, C. D. & Andersen, O. K., 2012, *Proceedings of the XIXth Congress of the International Society of Electrophysiology & Kinesiology, ISEK2012, 19-21 July 2012, Brisbane, Australia*. ISEK, s. 327, No. MOSP_P1.4

Motor adaptation following split-belt treadmill walking
Stubbs, P. W. & Gervasio, S., 2012, I: *Journal of Neurophysiology*. 108, 5, s. 1225-1227

Lower spinal interlimb communication: evidence for functional significance
Gervasio, S. & Mrachacz-Kersting, N., 2011, *Annual Meeting of the Society for Neuroscience, Neuroscience 2011, 12-16 November 2011, Washington, DC, USA*. Washington, DC: Society for Neuroscience, s. No. 923.13/VV27

Priser

Most Promising Proposal
Frahm, S. G. (Modtager), 14 aug. 0004

Presse/medie

Behandling af kroniske smerter
Gervasio, S.
08/11/2018

1 element af Mediedækning

Donationer

Gervasio, S.

26/10/2018 → 26/10/2018

2 elementer af Mediedækning

Hjernespil skal hjælpe børn, der sanser verden anderledes

Gervasio, S. & Telléus, P. K.

29/12/2023

1 element af Mediedækning

I fremtiden kan du måske træne smerte væk med hjerne gymnastik

Gervasio, S. & Telléus, P. K.

05/01/2024

1 element af Mediedækning

Når sanserne spiller hjernen et puds: Forskere har fået et nyt syn på den autistiske hjerne

Gervasio, S.

09/02/2024

1 element af Mediedækning

På bølgelængde med hjernen

Stevenson, A. J. T., Jochumsen, M. R. & Gervasio, S.

08/02/2024 → 08/02/2024

2 elementer af Mediedækning

Projekter

A direct measure of sensory processing anomalies

Gervasio, S. (PI (principal investigator)), Mazhari-Jensen, D. S. (Projektdeltager), Frahm, S. (Projektdeltager) & Lauritsen, M. B. (Projektdeltager)

Simon Fougner Hartmanns Familiefond, Danmarks Fri Forskningsfond

A neurofeedback treatment for chronic musculoskeletal pain

Gervasio, S. (PI (principal investigator))

Gigtforeningen

01/09/2014 → ...

A novel stimulation paradigm to reduce the habituation of the nociceptive withdrawal reflex

Gervasio, S. (Projektleder)

01/09/2014 → 30/05/2018

Interlimb coordination during human walking

Gervasio, S. (PI (principal investigator)) & Stevenson, A. J. T. (PI (principal investigator))

01/10/2010 → ...