

Leon Bonde Larsen
The Maersk Mc-Kinney Moller Institute
SDU Biorobotics
Email: lelar@mmmi.sdu.dk
Fax: 66157697



Employment

Assistant Professor

The Maersk Mc-Kinney Moller Institute
University of Southern Denmark
Odense M
1. Sep 2014 → present

Assistant Professor

SDU Biorobotics
University of Southern Denmark
1. Jan 1998 → present

Research outputs

Online computational ethology based on modern IT infrastructure

Larsen, L. B., Neerup, M. M. & Hallam, J., Jul 2021, In: Ecological Informatics. 63, 10 p., 101290.

Integrating Non-spiking Interneurons in Spiking Neural Networks

Strohmer, B., Stagsted, R. K., Manoonpong, P. & Larsen, L. B., 5. Mar 2021, In: Frontiers in Neuroscience. 15, 16 p., 633945.

CloudBrain: Online neural computation in the cloud

Larsen, L. B., Stagsted, R. K., Strohmer, B. & Christensen, A. L., 21. Jan 2021

Online biorobotics using microservices and event processing

Larsen, L. B., 14. Dec 2020, 103 p.

Framework for developing bio-inspired morphologies for walking robots

Billeschou, P., Bijma, N. N., Larsen, L. B., Gorb, S. N., Larsen, J. C. & Manoonpong, P., 7. Oct 2020, In: Applied Sciences (Switzerland). 10, 19, 20 p., 6986.

Flexible Spiking CPGs for Online Manipulation During Hexapod Walking

Strohmer, B., Manoonpong, P. & Larsen, L. B., 26. Jun 2020, In: Frontiers in Neurobotics. 14, 12 p., 41.

Supervision in a research community perspective: A model for increasing the learning outcome of project-writing across levels in Engineering

Larsen, L. B. & Jensen, T. W., 14. May 2020.

Event-based PID controller fully realized in neuromorphic hardware: a one DoF study

Stagsted, R. K., Vitale, A., Renner, A., Larsen, L. B., Christensen, A. L. & Sandamirskaya, Y., 2020, *2020 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. IEEE, p. 10939-10944 (I E E E International Conference on Intelligent Robots and Systems. Proceedings).

Integrating Non-Spiking Interneurons in Spiking Neural Networks

Steckhahn-Strohmer, B., Stagsted, R. K., Manoonpong, P. & Larsen, L. B., 2020, bioRxiv.

Towards neuromorphic control: A spiking neural network based PID controller for UAV

Stagsted, R. K., Vitale, A., Binz, J., Renner, A., Larsen, L. B. & Sandarmirskaya, Y., 2020, *Robotics: Science and Systems XVI*. 8 p.

ROS-Enabled Hardware Framework for Experimental Robotics

Steckhahn-Strohmer, B., Bøgild, A., Sørensen, A. S. & Larsen, L. B., Dec 2019, *Proceedings of International Conference on Reconfigurable Computing and FPGAs*. Andrews, D., Cumplido, R., Feregrino, C. & Platzner, M. (eds.). IEEE, 2 p.

High-Bandwidth Active Impedance Control of the Proprioceptive Actuator Design in Dynamic Compliant Robotics

Lund, S. H. J., Billeschou, P. & Larsen, L. B., 17. Oct 2019, In: *Actuators*. 8, 4, 33 p.

Virtual reality for birds

Larsen, L. B., 21. May 2019.

Online Feature Extraction and Event Generation for Computer-Animal Interaction

Larsen, L. B. & Neerup, M. M., 30. Apr 2019.

A dung beetle-inspired robotic model and its distributed sensor-driven control for walking and ball rolling

Thor, M., Strøm-Hansen, T., Larsen, L. B., Kovalev, A., Gorb, S. N., Baird, E. & Manoonpong, P., Dec 2018, In: *Artificial Life and Robotics*. 23, 4, p. 435-443

Artificial tutoring of songbirds

Larsen, L. B., 22. May 2018.

A dung beetle-inspired robotic model and its distributed sensor-driven control for walking and ball rolling

Thor, M., Strøm-Hansen, T. & Larsen, L. B., 2017, *Proceedings of the 2nd International Symposium on Swarm Behavior and Bio-Inspired Robotics*. SWARM

Advantages of using a biologically plausible embodied kinematic model for enhancement of speed and multifunctionality of a walking robot

Thor, M., Strøm-Hansen, T. & Larsen, L. B., 2017, *Proceedings of the 2nd International Symposium on Swarm Behavior and Bio-Inspired Robotics*. SWARM

Distributed Sensor-Driven Control for Bio-Inspired Walking and Ball Rolling of a Dung Beetle-Like Robot

Strøm-Hansen, T., Thor, M., Larsen, L. B., Baird, E. & Manoonpong, P., 2017, *Proceedings of the 2nd International Symposium on Swarm Behavior and Bio-Inspired Robotics*. SWARM, p. 196-199

A novel low-cost mobile robot for rapid prototyping of precision farming applications

Jensen, K., Neerup, M. M., Larsen, L. B. & Maagaard, J., 24. Nov 2014. 1 p.

Towards an Open Software Platform for Field Robots in Precision Agriculture

Jensen, K., Larsen, M., Nielsen, S. H., Larsen, L. B., Olsen, K. S. & Jørgensen, R. N., 2014, In: *Robotics*. 3, 2, p. 207-234

Extracurricular Activities Targeted towards Increasing the Number of Engineers Working in the Field of Precision Agriculture

Larsen, L. B., Stark Olsen, K., Ahrenkiel, L. & Jensen, K., 3. Jul 2013. 12 p.

First results: Robot mapping of areas contaminated by landmines and unexploded ordnance

Jensen, K., Larsen, L. B., Olsen, K. S., Hansen, J. & Jørgensen, R. N., 24. Apr 2012. 7 p.

Teaching and supervision

BB203 - Sound communication summer course

Coen Elemans & Leon Bonde Larsen
07/08/2015 → 20/08/2015

Behavioural Improvement of Tactile Sensing in a Hexapod Robot

Leon Bonde Larsen
01/02/2019 → 31/01/2022

Behaviourally Improved Sensing for Robots

Leon Bonde Larsen
15/08/2018 → 14/08/2021

COMP-E14 Computer math

Leon Bonde Larsen
01/09/2014 → 30/01/2015

EK-ES Embedded Systems

Leon Bonde Larsen
01/02/2017 → 30/06/2020

EK-ESD Embedded Software Design

Leon Bonde Larsen
01/09/2016 → 31/01/2021

EK-RTS Real-time Systems

Leon Bonde Larsen
01/02/2017 → 30/06/2020

EMB4 - Linux for embedded objects

Thor Andreassen & Leon Bonde Larsen
01/02/2016 → 30/06/2016

MIC-F14 Microcontrollers

Jorgen Larsen & Leon Bonde Larsen
01/02/2014 → 30/06/2014

RM-AI3 Adaptive embodied locomotion control systems

Leon Bonde Larsen
01/09/2015 → 30/01/2016

RM-AI4 Deep learning

John Hallam & Leon Bonde Larsen
01/02/2017 → 30/06/2017

RT-UAR Underactuated Robotics

Leon Bonde Larsen
01/09/2015 → 30/06/2018

RT-UAR Underactuated Robotics

Leon Bonde Larsen & Jürgen Herp
01/02/2018 → 01/06/2018

Semester project

Leon Bonde Larsen
01/09/2020 → ...

SE-OPN Operating Systems and Networks

Leon Bonde Larsen
01/09/2018 → ...

Teaching philosophy

My teaching philosophy is that students learn from what they do - not what I do. My function as a teacher is to provide the necessary conditions for them to do so. This could be providing them with sufficient overview, present the material in a sensible order, facilitate practical work or to keep them motivated and confident.

I find it very important to ground my teaching in the engineering process and a bee in my bonnet is the requirements specification. In times where everyone else seems to preach the agile and iterative approaches to engineering I insist that an engineer's most important tool is the requirements specification and until that is mastered the other methods will not work. I am also a strong believer in the power of writing as a catalyst for thought and this guides my approach to supervision.

The most precious resource in succeeding is the students' time and I make a big effort not to waste it. That means not asking them to read something unless it is directly relevant for what they are doing and not asking them to write a report if report writing is not the focus of the course. I strongly believe in the alignment between contents and exam, since this keeps the students motivated.