

Christian Mai
Postdoc
AAU Energi
Det Ingeniør- og Naturvidenskabelige Fakultet
Esbjerg Energy Section
AAU BLUE – Marine & Maritime Research
Adresstype: Besøgsadresse.
Niels Bohrs Vej 8
6700
Esbjerg
Danmark
E-mail: chrimai@energy.aau.dk
Telefon: +4599407844



Forskningsprofil

Født i Aalborg, Danmark, 1990. Uddannet BSc i Elektronik i 2012, MSc i IT i 2014 fra Aalborg Universitet, Esbjerg, Danmark. Ph.d. fra Syddansk Universitet, Sønderborg, Danmark, i 2020. Arbejder med robotteknologi og sanseteknologier i terrestriske og undervandsmiljøer og med simulering af sådanne systemer ved hjælp af digitale tvillinger. Har tidligere arbejdet indenfor procesovervågning og kontrolsystemer.

Ansættelse

Postdoc
Postdoc
Det Ingeniør- og Naturvidenskabelige Fakultet
Aalborg Øst, Danmark
1 sep. 2021 → 31 dec. 4712

Publikationer

The localization problem for underwater vehicles: An overview of operational solutions

Sørensen, F. F., Mai, C., von Benzon, M., Liniger, J. & Pedersen, S., 30 jun. 2025, I: *Ocean Engineering*. 330, 21 s., 121173.

Synthetic Subsea Imagery for Inspection under Natural Lighting with Marine-Growth

Mai, C., Wiele, C., Liniger, J. & Pedersen, S., 1 dec. 2024, I: *Ocean Engineering*. 313, Part 1, 20 s., 119284.

Incipient Fault Analysis of Thruster Propellers from Offshore Operations

von Benzon, M., Sørensen, F. F., Mai, C., Pedersen, S. & Liniger, J., 2024, *OCEANS 2024 - Singapore, OCEANS 2024*. IEEE (Institute of Electrical and Electronics Engineers), s. 1-8 10682342. (OCEANS - Proceedings).

Marine-Fouling Composition Estimation using Cost-effective Sensing

Mai, C., Sørensen, F. F., Liniger, J. & Pedersen, S., 2024, *Proceedings of the OCEANS 2024 - Halifax*. IEEE (Institute of Electrical and Electronics Engineers), 10754572. (OCEANS - Proceedings).

Semantic segmentation using synthetic images of underwater marine-growth

Mai, C., Liniger, J. & Pedersen, S., 2024, I: *Frontiers in Robotics and AI*. 11, 1459570.

Towards Autonomous Subsea Maintenance on Offshore Structures with Unmanned Underwater Vehicles

Pedersen, S., Liniger, J., Mai, C., von Benzon, M. & Sørensen, F. F., 2024, *OCEANS 2024 - Singapore*. IEEE (Institute of Electrical and Electronics Engineers), s. 1-7 10682312. (OCEANS - Proceedings).

Commercial Optical and Acoustic Sensor Performances under Varying Turbidity, Illumination, and Target Distances

Sørensen, F. F., Mai, C., Olsen, O. M., Liniger, J. & Pedersen, S., 21 jul. 2023, I: *Sensors*. 23, 14, 23 s., 6575.

Internal Model Control for AUVs with Output Time Delays and Input Disturbances

Pedersen, S., Liniger, J., Sørensen, F. F., von Benzon, M., Nielsen, M. E. & Mai, C., 1 jul. 2023, I: IFAC-PapersOnLine. 56, 2, s. 6710-6715 6 s.

Optical and Acoustic Imaging Comparison in a Controlled Underwater Environment

Sørensen, F. F., Mai, C., von Benzon, M., Pedersen, S. & Liniger, J., 2023, *Proceedings of 2023 OCEANS Conference & Exposition, Oceans 2023 Limerick*. IEEE (Institute of Electrical and Electronics Engineers), s. 1-8 8 s. 10244506

Fault Tree Analysis of Sensor Technologies for Autonomous UUV Navigation

Sørensen, F. F., von Benzon, M., Pedersen, S., Liniger, J. & Mai, C., 1 okt. 2022, I: IFAC-PapersOnLine. 55, 31, s. 484-490 7 s.

Design of an Autonomous ROV for Marine Growth Inspection and Cleaning

Mai, C., Benzon, M. V., Sørensen, F. F., Klemmensen, S. S., Pedersen, S. & Liniger, J., 2022, *2022 IEEE/OES Autonomous Underwater Vehicles Symposium, AUV 2022*. IEEE (Institute of Electrical and Electronics Engineers), 6 s. (IEEE/OES Autonomous Underwater Vehicles Symposium (AUV)).

Experimental investigation of non-contact 3D sensors for marine-growth cleaning operations

Mai, C., Liniger, J., Jensen, A. L., Sørensen, H. & Pedersen, S., 2022, *5th IEEE International Conference on Image Processing, Applications and Systems (IPAS 2022)*. IEEE (Institute of Electrical and Electronics Engineers)

On the Autonomous Inspection and Classification of Marine Growth on Subsea Structures

Liniger, J., Jensen, A. L., Pedersen, S., Sørensen, H. & Mai, C., 2022, *Proceedings of 2022 OCEANS Conference & Exposition, Oceans 2022 Chennai*. IEEE (Institute of Electrical and Electronics Engineers)

Towards Precision and Reliability in Autonomous Agricultural Robots

Mai, C., sep. 2020, 124 s.

Towards printing mechatronics: Considerations for 3D-printed conductive coupling

Popa, A. A., Mai, C., Duggen, L. & Jouffroy, J., 30 aug. 2018, *AIM 2018 - IEEE/ASME International Conference on Advanced Intelligent Mechatronics*. IEEE Signal Processing Society, s. 827-832 6 s. 8452439. (IEEE/ASME International Conference on Advanced Intelligent Mechatronics, AIM, Bind 2018-July).

Trajectory tracking for autonomous turf-care vehicle using Liouvillian approach

Mai, C., Top, S. & Jouffroy, J., 30 aug. 2018, *AIM 2018 - IEEE/ASME International Conference on Advanced Intelligent Mechatronics*. IEEE Signal Processing Society, s. 1438-1443 6 s. 8452347. (IEEE/ASME International Conference on Advanced Intelligent Mechatronics, AIM, Bind 2018-July).

Covering path generation for autonomous turf-care vehicle

Mai, C., Jouffroy, J., Top, S. & Bjærre, M., 21 aug. 2017, *2017 IEEE International Conference on Advanced Intelligent Mechatronics, AIM 2017*. IEEE Signal Processing Society, s. 346-351 6 s. 8014041. (IEEE/ASME International Conference on Advanced Intelligent Mechatronics, AIM).

Power Consumption Optimization for Multiple Parallel Centrifugal Pumps

Jepsen, K. L., Hansen, L., Mai, C. & Yang, Z., aug. 2017, *Proceedings of 2017 IEEE Conference on Control Technology and Applications (CCTA)*. IEEE Press, s. 806-811 6 s.

Modeling and Control of Industrial ROV's for Semi-Autonomous Subsea Maintenance Services

Mai, C., Pedersen, S., Hansen, L., Jepsen, K. L. & Yang, Z., jul. 2017, I: IFAC-PapersOnLine. 50, 1, s. 13686-13691 6 s.

Subsea Infrastructure Inspection: A Review Study

Mai, C., Pedersen, S., Hansen, L., Jepsen, K. L. & Yang, Z., dec. 2016, *Proceedings of IEEE 6th International Conference on Underwater System Technology: Theory and Applications (USYS)*. IEEE Press, s. 71-76 6 s.

Challenges of Membrane Filtration for Produced Water Treatment in Offshore Oil & Gas Production

Jepsen, K. L., Hansen, L., Mai, C. & Yang, Z., sep. 2016, *Proceedings of OCEANS'16 MTS/IEEE Monterey*. IEEE Press, 8 s.

Plant-wide Control Strategy for Improving Produced Water Treatment

Yang, Z., Pedersen, S., Durdevic, P., Mai, C., Hansen, L., Jepsen, K. L., Aillos, A. & Andreassen, A., aug. 2016, *Proceedings of 2016 International Field Exploration and Development Conference (IFEDC)*. Institution of Engineering and Technology (IET), 8 s.

Cost-effective ERT technique for oil-in-water measurement for offshore hydrocyclone installations

Durdevic, P., Hansen, L., Mai, C., Pedersen, S. & Yang, Z., 1 jul. 2015, I: *IFAC-PapersOnLine*. 28, 6, s. 147-153 7 s.

Cost-Effective ERT Technique for Oil-in-Water Measurement for Offshore Hydrocyclone Installations

Durdevic, P., Hansen, L., Mai, C., Pedersen, S. & Yang, Z., 2015, I: *IFAC-PapersOnLine*. 48, 6, s. 147–153 7 s.

Online Slug Detection in Multi-phase Transportation Pipelines Using Electrical Tomography

Pedersen, S., Mai, C., Hansen, L., Durdevic, P. & Yang, Z., 2015, I: *IFAC-PapersOnLine*. 48, 6, s. 159–164 6 s.

Intelligent Control of Diesel Generators Using Gain-Scheduling Based on Online External-Load Estimation

Mai, C., Jepsen, K. L., Yang, Z., Hansen, L. & Madsen, K. K., nov. 2014, *Proceedings of the IEEE International Power Electronics and Application Conference and Exposition (IEEE PEAC'14)*. Shanghai: IEEE Press, s. 966 - 971 6 s.

Emulation and Control of Slugging Flows in a Gas-Lifted Offshore Oil Production Well Through a Lab-sized Facility

Jepsen, K. L., Hansen, L., Mai, C. & Yang, Z., 30 aug. 2013, *Proceedings of the 2013 IEEE International Conference on Control Applications (CCA)*. IEEE Press, s. 906-911 6 s. (I E E E International Conference on Control Applications. Proceedings).

Priser

Innovation Project of the Year

Liniger, J. (Modtager), Pedersen, S. (Modtager), Sørensen, F. F. (Modtager), von Benzon, M. (Modtager), Mai, C. (Modtager) & Klemmensen, S. (Modtager), 2024

Best Sesion Paper Award

Mai, C. (Modtager) & Sørensen, F. F. (Modtager), 2022

Esbjerg University Price

Mai, C. (Modtager), Jepsen, K. L. (Modtager) & Hansen, L. (Modtager), 2016

Bevillinger

NextGen Robotics: NextGen Robotics (Udvikling af undervandsrobot til havmølleparker)

Liniger, J. (PI (principal investigator)), Pedersen, S. (CoPI), Mai, C. (Projektdeltager) & Christensen, M. D. (Projektkoordinator)
Erhvervshus Fyn: 200.000,00 kr.
01/09/2023 → 31/08/2025

Projekter

NextGen Robotics: NextGen Robotics (Udvikling af undervandsrobot til havmølleparker)

Liniger, J. (PI (principal investigator)), Pedersen, S. (CoPI), Mai, C. (Projektdeltager) & Christensen, M. D. (Projektkoordinator)
Erhvervshus Fyn
01/09/2023 → 31/08/2025

Virtual acoustic underwater simulations

Mai, C. (PI (principal investigator)), Liniger, J. (Projektansøger) & Christensen, M. D. (Projektkoordinator)
01/01/2024 → 31/12/2024

DIN-ECO: Boosting Digital Innovation and Transformation Capacity of HEIs in an Entrepreneurial ecosystem

Pedersen, S. (PI (principal investigator)), Bram, M. V. (Projektdeltager), Mai, C. (Projektdeltager), Sørensen, F. F. (Projektdeltager) & Christensen, M. D. (Projektkoordinator)
EIT DIGITAL 2022 (EU)
01/07/2022 → 30/06/2024

ACOMAR: Auto Compact Marine Growth Remover

Liniger, J. (Projektansøger), Pedersen, S. (Projektansøger), von Benzon, M. (Projektdeltager), Sørensen, H. (Projektdeltager), Sørensen, F. F. (Projektdeltager), Jensen, A. L. (Projektdeltager), Yang, Z. (Projektdeltager), Nielsen, M. E. (Projektdeltager), Mai, C. (Projektdeltager) & Christensen, M. D. (Projektkoordinator)
EUDP
01/09/2020 → 31/12/2023

Virtual underwater environments

Mai, C. (PI (principal investigator)), Liniger, J. (Projektansøger) & Christensen, M. D. (Projektkoordinator)
01/01/2023 → 31/12/2023

Underwater Robot - VideoRay ROV

Yang, Z. (Projektleder), Mai, C. (Projektdeltager) & Pedersen, S. (Projektdeltager)
22/05/2015 → 01/06/2018

Inline Inspection Robot - Inukun Versatrax 150 Crawler

Yang, Z. (Projektleder) & Mai, C. (Projektdeltager)
01/05/2016 → 01/11/2016

Presse/medie**Afhandling medførte succes**

Mai, C., Hansen, L. & Jepsen, K. L.
09/11/2015
1 element af Mediedækning