

CURRICULUM VITAE

Professor Kristin Y. Pettersen

Born: 1969-01-28, Fana, Norway

Nationality: Norwegian

Marital status: Married. Two children.

Present position: Professor, Department of Engineering Cybernetics, NTNU
Adjunct Professor, Norwegian Defence Research Establishment (FFI)
Norwegian University of Science and Technology
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Academic degrees:

1996 PhD Engineering Cybernetics, Norwegian University of Science and Technology (NTNU)
1991 MSc Engineering Cybernetics, Norwegian Institute of Technology (NTH)

Work experience:

2015-2016	CEO and co-founder	Eelume AS
2014-	Adjunct Professor	Norwegian Defence Research Establishment (FFI)
2013-2022	Key scientist	CoE Autonomous Marine Operations and Systems (NTNU AMOS)
2011-2013	Head of Department	Dept. Engineering Cybernetics, NTNU
2009-2011	Vice-head of Department	Dept. Engineering Cybernetics, NTNU
2010-2013	Director	NTNU Strategic Area ICT Programme of Robotics
2008	Guest Professor	Section for Automation and Control, Aalborg University
2002-	Professor	Dept. Engineering Cybernetics, NTNU
2001-2013	Scientific Advisor	SINTEF ICT
1999	Visiting Fellow	Dept. Mech. and Aerospace Eng., Princeton University
1997-2002	Associate Professor	Dept. Engineering Cybernetics, NTNU
1996-1997	Assistant Professor	Dept. Engineering Cybernetics, NTNU
1993-1996	Research scholar	Dept. Engineering Cybernetics, NTNU/ Norwegian Research Council
1992	Teaching assistant	Dept. Engineering Cybernetics, NTNU

Board/Council work:

2017-2020	Member	IFAC Council
2017-2020	Vice-chair	IFAC Administrative & Finance Committee
2016-	Board member	Eelume AS
2012-2014	Board member	IEEE Control Systems Society - Board of Governors
2011-2013	Vice-chair	Norwegian Defence Research Establishment (FFI)

2011-2013	Deputy board member	Norwegian Smartgrid Centre
2010-2013	Deputy council member	SINTEF
2010-2017	Board member	NTNU Applied Underwater Robotics Laboratory
2007-2011	Board member	Norwegian Defence Research Establishment (FFI)
2008-	Council member	SINTEF Information and Communication Technology
2007-2011	Board member	NTNU/SINTEF Gemini centre of Advanced Robotics
2005-2009	Chair	KEE Control Systems Technology AS (KEEtech)
2005-2009	Council member	Faculty of Information Tech., Math. and Electrical Eng., NTNU
2005-2009	Council member	Dept. Engineering Cybernetics, NTNU
2004-2007	Board member	SINTEF Information and Communication Technology
1999-2005	Board member	Dept. Engineering Cybernetics, NTNU
2002-2005	Board member	Faculty of Information Tech., Math. And Electrical Eng., NTNU

Selected Research Projects:

2013-2022	Key scientist	<p>Project title: Autonomous Marine Operations and Systems (NTNU AMOS).</p> <p>Centre of Excellence funded by the Norwegian Research Council.</p> <p>Project Manager for Project 4: "Autonomous underwater robotics for mapping, monitoring and intervention".</p> <p>Coordinator for Area 3: Autonomous unmanned vehicles and operations (Projects 3,4,5).</p> <p>Project partners: NTNU, SINTEF, Statoil, DNV.</p> <p>Total Budget 600 MNOK</p>
2011-2015	Project manager	<p>Project title: Snake Locomotion in Challenging Environments (SLICE)</p> <p>FRITEK project funded by the Norwegian Research Council</p> <p>Project partners: NTNU and SINTEF</p> <p>Budget: 13.9 MNOK</p>
2009-2014	Project manager	<p>Project title: Control, Information and Communication Systems for Environmental and Safety Critical Systems (CICS)</p> <p>SUP project funded by the Norwegian Research Council</p> <p>Budget: 15 MNOK</p>
2009-2014	Key scientist	<p>Project title: Next Generation Robotics for Norwegian Industry (NextGenRob)</p> <p>Project partners: SINTEF, NTNU, Statoil, Hydro, Tronrud Engineering, Glen Dimplex Nordic, SbSeating (HÅG) and RobotNorge</p> <p>Budget: 36 MNOK</p>
2006-2009	Project manager	<p>Project title: Underwater vehicles for synchronization of formations of advanced autonomous underwater vehicles and satellites (AUVSAT)</p> <p>NTNU AVIT project</p> <p>Budget: 1 MNOK</p>
2006-2010	NTNU Project leader	<p>FREE_{sub}NET: A European Research Training Network on Key Technologies for Intervention Underwater Autonomous Vehicles</p> <p>EU Marie Curie Research Training Network, FP6-2005-Mobility-1/RTN</p> <p>Budget NTNU: 2 MNOK</p>
2004-2009	Key scientist	<p>Computational Methods in Nonlinear Motion Control (CM-in-MC)</p> <p>SUP project funded by the Norwegian Research Council</p> <p>Budget: 25 MNOK</p>

Editorial work:

- 2015- Review Editor, [Robotic Control Systems](#), Frontiers in Robotics and AI.
- 2012- Section Editor of "Control of Marine Vessels", [Encyclopedia of Systems and Control](#). Eds. J. Baillieul and T. Samad, Springer-Verlag, London, 2015. ISBN 978-1-4471-5057-2.
- 2012-2015 Associate Editor [IEEE Control Systems Magazine](#).
- 2010-2015 Associate Editor [IEEE Transactions on Control Systems Technology](#).
- 2008-2009 Member of the Editorial Board [Simulation Modelling Practice and Theory](#).
- 2009-2011 Associate Editor IEEE International Conference on Robotics and Automation Shanghai, China, 2011, Anchorage, Alaska, 2010, and Kobe, Japan, 2009.
- 2009 Associate editor IEEE/RSJ International Conference on Intelligent Robots and Systems, St. Louis, USA, 2009.

IPC/Conference organization:

- 2018 Program chair of *2018 IEEE Conference on Control Technology and Applications (CCTA)*, Copenhagen, Denmark.
- 2015 IPC member *14th European Control Conference*, Linz, Austria.
- 2014 IPC member and Associate Editor *22nd Mediterranean Conference on Control & Automation*, Palermo, Italy.
- 2014 IPC member *13th European Control Conference*, Strasbourg, France.
- 2011 IPC member *50th IEEE Conference on Decision and Control and European Control Conference*, Orlando, Florida.
- 2010 IPC member *7th IFAC Symposium on Intelligent Autonomous Vehicles*, Lecce, Italy.
- 2010 IPC member *1st Virtual Control Conference*.
- 2009 IPC member *8th IFAC Conference on Manoeuvring and Control of Marine Craft*, Guarujá, Brazil.
- 2006 IPC member *7th IFAC International Conference on Manoeuvring and Control of Marine Craft*, Lisbon.

Awards/Appointments:

- 2017 Fellow of the IEEE.
- 2016 Eelume AS awarded "[Subsea Upcoming Company of the Year](#)", by GCE Subsea.
- 2013 Appointed member of the Norwegian Academy of Technological Sciences – [NTVA](#).
- 2006 IEEE Transactions on Control Systems Technology Outstanding Paper Award, for the paper: K.Y. Pettersen, F. Mazenc and H. Nijmeijer, "Global Uniform Asymptotic Stabilization of an Underactuated Surface Vessel: Experimental Results", *IEEE Transactions on Control Systems Technology*, Vol. 12, No. 6, Nov. 2004.
- 2004 Senior member of the IEEE.
- 1993 Norwegian Research Council Personal Doctoral Research Fellowship.

Plenary lectures:

- 2017 Snake Robots: from Biology, through University, towards Industry. Plenary lecture at IFAC World Congress, Toulouse, France, July 9-14, 2017.
- 2016 Snake Robots – Swimming snake robots – a bio-inspired solution for subsea inspection and intervention. Plenary lecture at IEEE International Symposium on Safety, Security, and Rescue Robotics (SSRR), Lausanne, Switzerland, October 23-27, 2016.

- 2015 Snake Robots – A solution for firefighting, search and rescue, and subsea IMR operations. Distinguished Lectures Speaker at University of Toronto, Canada, October 22, 2015.
<http://www.ece.utoronto.ca/about/distinguished-lectures/>
- 2014 Swimming manipulators – a bio-inspired underwater robotic solution. Plenary lecture at 10th IFAC Conference on Manoeuvring and Control of Marine Craft (MCMC), Copenhagen, Denmark, August 24-26, 2015.
- 2013 Snake Robots - From Biology to Nonlinear Control. Semi-Plenary lecture at IFAC Symposium on Nonlinear Control, Toulouse, France, September 4-6, 2013.

Membership in Academic and Professional Organizations and Committees:

- 2015- Member of [IFAC Technical Committee on Mechatronics](#)
- 2014 Member of [European Research Council Consolidator Grants Evaluation Panel](#) PE7, Systems and Communication Engineering
- 2014 Member of the Evaluation Committee of [the ARGOS challenge](#) Total / Agence Nationale de la Recherche (ANR)
- 2012- Member of the management team of NTNU IME Lighthouse Project [Robotics](#).
- 2011-16 Member [IEEE Robotics and Automation Society Technical Committee on Space Robotics](#).
- 2009-13 Member of the management team of NTNU Strategic Area ICT, [TSO ICT](#).
- 2009 - Member [IEEE Robotics and Automation Society Technical Committee on Marine Robotics](#).
- 2006-11 Member of [IFAC Technical Committee on Nonlinear Control System](#).
- 2003/04 Member of Norwegian Research Council Committee developing a Strategic Plan for Information and Communication Technology [Strategic plan](#).
- 1993- [IEEE: Institute of Electrical and Electronics Engineers](#) (Senior member since 2004)
- 1993- [Norwegian Society of Automation \(NFA\)](#), the Norwegian branch of the [International Federation of Automatic Control \(IFAC\)](#).
- 1992- Member of the [Norwegian Society of Chartered Engineers \(Tekna\)](#)

Awards students:

- 2014 Filippo Sanfilippo, awarded the *2014 IEEE International Conference on Information and Automation Best Student Paper Award* for the paper, "JOpenShowVar: an Open-Source Cross-Platform Communication Interface to Kuka Robots" by F. Sanfilippo, M. Fago, L.I. Hatledal, K.Y. Pettersen and H. Zhang.
- 2012 Walter Caharija, awarded the *2012 IFAC Conference on Manoeuvring and Control of Marine Craft Best Student Paper Award* for the paper "Relative Velocity Control and Integral LOS for Path Following of Underactuated Surface Vessels" by W. Caharija, M. Candeloro, K.Y. Pettersen and A.J. Sørensen.
- 2011 Pål Liljebäck, awarded the *2011 ExxonMobil prize for best doctoral dissertation at NTNU* for his thesis: [Modelling, Development, and Control of Snake Robots](#), NTNU thesis 2011:70.
- 2007 Øystein Engelhardtzen, awarded *Best Master thesis 2007* by [Norwegian Society of Automation \(NFA\)](#), the Norwegian branch of the [International Federation of Automatic Control \(IFAC\)](#) for his Master thesis "3D AUV Collision Avoidance".
- 2005 Even Børhaug, awarded *Best Master thesis 2005* by [Norwegian Society of Automation \(NFA\)](#), the Norwegian branch of the [International Federation of Automatic Control \(IFAC\)](#) for his Master thesis "Cross-track maneuvering and way-point control of underactuated AUVs in particular and mechanical systems in general".

Orders/Societies:

- 2004 - Grand Master of the Order of the Golden Feedback Loop
- 1996 - Knight of the Order of the Golden Feedback Loop
- 1987 - Member of the [Sct. Omega fraternity](#), NTH/NTNU

Current PhD Candidates:

1. Ida-Louise Borlaug. Control of Articulated Intervention-AUVs.
2. Henrik Schmidt-Didlauskies (co-advised). Modelling and Control of Hyper-Redundant Underwater Manipulators.
3. Jørgen Sverdrup-Thygeson. Swimming Robot Manipulators for Subsea IMR.
4. Martin Syre Wiig. Motion Planning for Autonomous Underwater Vehicles.
5. Anna Kohl. Guidance and Control of Underwater Snake Robots Using Planar Sinusoidal Gaits.
6. Albert Sans-Muntadas. Integrated Underwater Navigation and Mapping Based on Imaging and Hydro-acoustic Sensors.
7. Michael Remo Palmén Ragazzon (co-advised). Nanoscale Robotics in Liquid Environments.

Graduated doctoral candidates:

1. Anna Magdalena Kohl (2017). Guidance and Control of Underwater Snake Robots Using Planar Sinusoidal Gaits, NTNU thesis 2017:292.
2. Claudio Paliotta (2017). Control of Under-actuated Marine Vehicles, [NTNU thesis 2017:240](#).
3. Dennis J.W. Belleter (2016). Control of Underactuated Marine Vehicles in the Presence of Environmental Disturbances, [NTNU thesis 2016:337](#).
4. Signe Moe (2016). Guidance and Control of Robot Manipulators and Autonomous Marine Robots, [NTNU thesis 2016:322](#).
5. Eleni Kelasidi (2015). Modeling, Control and Energy Efficiency of Underwater Snake Robots, [NTNU thesis 2015:140](#).
6. Filippo Sanfilippo (2015). *Alternative and Flexible Control Methods for Robotic Manipulators*, [NTNU thesis 2015:192](#).
7. Daniel de Almeida Fernandes (2015). (Co-supervisor). *An Output Feedback Motion Control System for ROVs: Guidance Navigation and Control*, [NTNU thesis 2015:122](#).
8. Ehsan Rezapour (2015). *Model-based Locomotion Control of Underactuated Snake Robots*, [NTNU thesis 2015:46](#).
9. Walter Caharija (2014). *Integral Line-of-Sight Guidance and Control of Underactuated Marine Vehicles*, [NTNU thesis 2014:316](#).
10. Magnus Christian Bjerkgeng (2013). *Sensor-based Control of Industrial Manipulators*, [NTNU thesis 2013:240](#).
11. Johannes Schrimpf (2013). (Co-supervisor). *Sensor-based Real-time control of Industrial Robots*, [NTNU thesis 2013:225](#).
12. Arnfinn Aas Eielsen (2012). (Co-supervisor). *Topics in Control of Nanopositioning Devices*, [NTNU thesis 2012:315](#).
13. Mernout Burger (2011). *Disturbance Rejection using Conditional Integrators*, [NTNU thesis 2011:4](#).
14. Pål Liljebäck (2011). *Modelling, Development, and Control of Snake Robots*, [NTNU thesis 2011:70](#).
15. Pål Johan From (2010). (Co-supervisor) *Off-Shore Robotics – Robust and Optimal Solutions for Autonomous Operations*, [NTNU thesis 2010:96](#).

16. Anne Karin Bondhus (2010). Leader-Follower Synchronization of Mechanical Systems, [NTNU thesis 2010:58](#).
17. Even Børhaug (2008). Nonlinear Control and Synchronization of Mechanical Systems, [NTNU thesis 2008:298](#).
18. Jon Erling Gorset Refsnes (2008) (Co-supervisor). Nonlinear Model-Based Control of Slender Body AUVs, NTNU thesis 2008:60.
19. Aksel Andreas Transeth (2008). Modeling and Control of Snake Robots, [NTNU thesis 2008:2](#).
20. Erik Kyrkjebø (2007). Motion Coordination of Mechanical Systems: Leader-Follower Synchronization of Euler-Lagrange Systems using Output Feedback Control, [NTNU thesis 2007:60](#).

Post Docs:

1. Eleni Kelasidi, 2016-2018.
2. Konstantin Amelin, 2015-2016.
3. Pål Liljebäck, 2011-2015.
4. Christian Holden, 2011-2013.
5. Erik Kyrkjebø, 2007-2008.
6. Alexey Pavlov, 2005-2007.

Dissemination:

[Kristin Y. Pettersen \[People in Control\]](#), Control Systems Magazine, Vol. 37, No. 4, 2017, pp. 26-27.

[A giant subsea serpent](#), By Steinar Brandslet, Gemini, Starmus Special Edition, June 2017.

[水中で魚の健康診断や石油企業のお手伝い、泳ぐへび型ロボット／ノルウェー](#). By Asaki Abumi, Yahoo!JAPAN, 2017-06-27.

[Hun har utviklet slangeroboter og jobber med å lukeparkere skip](#), By Joachim Seehusen, Teknisk Ukeblad, 2017-03-12.

[This terrifying robot snake could repair machines at the bottom of the ocean](#), Mashable, 2016-11-18.

[See snake](#). By Russell McCulley, Upstream Technology, June, 2016, pp. 20-22.

[Simplified Subsea Intervention with an Electric Eel](#). By Gunnar Buvik, GCE Subsea, 2016-06-15.

[Slangeroboter utfører oppdrag i havet](#), By Egil M. Opland, Adressa and Adressa.no, 2016-04-19.

[Slangerobot på havbunnen](#), By Morten Andersen, NRK Dagsrevyen 21, 2016-04-18.

[Denne slangeroboten skal bli Statoils "vaktmester" på havbunnen](#), By Marius Lorentzen, E24, 2016-04-18.

[Slangeroboter skal revolusjonere vedlikeholdet subsea](#). By Ina Andersen, Teknisk Ukeblad, 2016-04-19.

[Slangeroboter forbedrer subsea inspeksjon og vedlikehold](#). By Kristin Y. Pettersen and Pål Liljebäck. DYP Magasinet, No. 2, 2016, pp. 18-19.

[Our swimming snake robots presented in different media](#).

[Our ground snake robots presented in different media](#).

[Dronene kommer](#), Forskningsrådets bilag om Forskningsdagene, VG 2013-09-17, side 7.

[Fremtiden er her](#). Bilag om teknisk kybernetikk i Dagens Næringsliv 6. mars 2013.

[AMOS skal gjøre verden smartere](#), By Svein Inge Meland, Adresseavisen 2013-02-26.

[Nysgjerrig på roboter](#). By Magnus Holm. Mangschou forlag, May 2012. ISBN 978-82-8238-050-8.

[Denne roboten kan gjøre egne valg.](#) Dagbladet Magasinet, 2009-09-15.

[Robotbarna.](#) By Åse Dragland. Gemini No. 3, 2009.

[Snake robot uses obstacles for locomotion.](#) By Mason Inman. New Scientist, March 2008.

[Il serpente meccanico.](#) By Alessio Balbi. TV Repubblica, 2008-03-05.

[Reparere...transportere...patruljere.](#) By Hege J. Tunstad. Gemini No. 1, 2008

[Myk professor.](#) By Heidi Bolstad. Adresseavisen Ukeadressa, 2007-02-17.

[Fartøy i flokk og formasjon.](#) By Hege J. Tunstad. Gemini No. 5, 2006, and in Byens Næringsliv 2006-12-05. Koreografi for båt. Forskning.no, 2007-01-05.

[Seduced by snake robots.](#) By Synnøve Ressem. Universitetsavisa 2006-09-21.

[Snake robot to the rescue.](#) By Åse Dragland. Gemini 2005/2006.

Anna Konda is also addressed several places at the web, including Slashdot: [Anna Konda, the Robotic Firefighter](#), Engadget: [Anna Konda: the firefighting snakebot](#), Technovelgy: [Robotic Fire Hose Anna Konda](#), and Innovations report: [Snake robot to the rescue](#).

[Verdens mest avanserte brannslange.](#) By Anne Marte Blindheim. - Dagbladet, 15.02.2005.

[Q&A: Norwegian Professor Kristin Ytterstad Pettersen.](#) By Sarah Asp. - Viking Magazine, Sons of Norway, May 2005

[Ubåtprofessoren](#) By Beate Horg. Gemini Ung, 2004. Reprint: Yrke og utdanning - supplement to Adresseavisen 2005-02-02.

[Møt Slingeroboten Anna Conda.](#) - NRK Midnytt. 18.40 News 2005-02-08.

[Med kontroll på det meste...](#) By Synnøve Ressem. Gemini no. 2, 2003. English Reprint: "In Full Control - Most of the Time." The Norseman no. 5, 2003, pp. 19-21.

Publication list – Kristin Y. Pettersen

Books

1. [*Sensing and Control for Autonomous Vehicles – Applications to Land, Water and Air Vehicles*](#), Eds. T.I. Fossen, K.Y. Pettersen and H. Nijmeijer, Lecture Notes in Control and Information Sciences, Vol. 474, Springer International Publishing, 2017. ISBN 978-3-319-55371-9.
2. [*Vehicle-manipulator Systems: Modeling for Simulation, Analysis and Control*](#), P.J. From, J.-T. Gravdahl and K.Y. Pettersen, Advances in Industrial Control, Springer-Verlag London. 2014. ISBN 978-1-4471-5462-4.
3. [*Snake Robots: Modelling, Mechatronics, and Control*](#), P. Liljebäck, K.Y. Pettersen, Ø. Stavadahl and J.-T. Gravdahl, Advances in Industrial Control, Springer-Verlag London, 2013. ISBN: 978-1-4471-2995-0.
4. [*Group Coordination and Cooperative Control*](#), Eds. K.Y. Pettersen, J.T.Gravdahl and H. Nijmeijer, Lecture Notes in Control and Information Sciences, Volume 336, Springer-Verlag Berlin-Heidelberg, 2006, ISBN: 3-540-33468-8.

Journal papers

1. K.Y. Pettersen, "Snake Robots", *Annual Reviews in Control*, Vol. 44, 2017, pp. 19-44.
2. Eleni Kelasidi, P. Liljebäck, K.Y. Pettersen and J.T. Gravdahl, "Integral Line-of-Sight Guidance for Path Following Control of Underwater Snake Robots: Theory and Experiments", *IEEE Transactions on Robotics*, Vol. 33, No. 3, 2017, pp. 610-628.
3. K.Y. Pettersen, "Lyapunov Sufficient Conditions for Uniform Semiglobal Exponential Stability", *Automatica*, Vol. 78, 2017, pp. 97-102.
4. A. Kohl, E. Kelasidi, A. Mohammadi, M. Maggiore and K.Y. Pettersen, "Planar Maneuvering Control of Underwater Snake Robots Using Virtual Holonomic Constraints", *Bioinspiration and Biomimetics*, Vol. 11, No. 6, 2016.
5. E. Kelasidi, M. Jesmani, K.Y. Pettersen, and J.T. Gravdahl, "Multi-objective optimization for efficient motion of underwater snake robots", *Springer Artificial Life and Robotics*, No. 4, Vol. 21, 2016.
6. W. Caharija, K.Y. Pettersen, M. Bibuli, P. Calado, E. Zereik, J. Braga, J.T. Gravdahl, A.J. Sørensen, M. Milovanovic and G. Bruzzone, "Integral Line-of-Sight Guidance and Control of Underactuated Marine Vehicles: Theory, Simulations and Experiments", *IEEE Transactions on Control Systems Technology*, Vol. 24, No. 5, 2016, pp. 1623-1642.
7. E. Rezapour, K.Y. Pettersen, J.T. Gravdahl and A. Hofmann, "Formation Control of Underactuated Bio-inspired Snake Robots", in *Springer Artificial Life and Robotics*, No.3, Vol. 21, 2016, pp 282–294.
8. S. Moe, G. Antonelli, A. Teel, K.Y. Pettersen and J. Schrimpf, "Set-based Tasks within the Singularity-robust Multiple Task-priority Inverse Kinematics Framework: General Formulation, Stability Analysis and Experimental Results", in *Frontiers in Robotics and AI, section Robotic Control Systems*, April 2016.
9. A. Mohammadi, E. Rezapour, M. Maggiore and K.Y. Pettersen, "Maneuvering Control of Planar Snake Robots Using Virtual Holonomic Constraints", *IEEE Transactions on Control Systems Technology*, Vol. 24, No. 3, 2016, pp. 884-899.
10. F. Sanfilippo, L.I. Hatledal, A. Styve, K.Y. Pettersen and H. Zhang "Integrated Flexible Maritime Crane Architecture for the Offshore Simulation Centre AS (OSC)", *IEEE Journal of Oceanic Engineering*, Vol. 41, No. 2, 2016, pp. 450-461.
11. E. Kelasidi, P. Liljebäck, K.Y. Pettersen and J.T. Gravdahl, "Innovation in Underwater Robotics: Biologically Inspired Swimming Snake Robots", *IEEE Robotics and Automation Magazine*, Vol. 23, No.1, 2016, pp. 44-62.
12. A. Kohl, K.Y. Pettersen, E. Kelasidi and J.T. Gravdahl, "Planar Path Following of Underwater Snake Robots in the Presence of Ocean Currents", *IEEE Robotics and Automation Letters*, Vol. 1, No. 1, 2016, pp. 383-390.
13. E. Kelasidi, P. Liljebäck, K.Y. Pettersen and J.T. Gravdahl, "Experimental Investigation of Efficient Locomotion of Underwater Snake Robots for Lateral Undulation and Eel-like Motion Patterns", *Springer Robotics and Biomimetics*, Vol. 2, No. 8, 2015.

14. F. Sanfilippo, L.I. Hatledal, H. Zhang, M. Fago and K.Y. Pettersen, "Controlling Kuka Industrial Robots: Flexible Communication Interface JOpenShowVar" *IEEE Robotics and Automation Magazine*, Vol. 22, No. 4, 2015, pp. 96-109.
15. D. de A. Fernandes, A.J. Sørensen, K.Y. Pettersen, D.C. Donha, "Output feedback motion control system for observation class ROVs based on a high-gain state observer: theoretical and experimental results", *Control Engineering Practice*, Vol. 39, 2015, pp. 90-102.
16. T.I. Fossen, K.Y. Pettersen and R. Galeazzi, "Line-of-Sight Path Following for Dubins Paths with Adaptive Sideslip Compensation of Drift Forces", *IEEE Transactions on Control Systems Technology*, Vol. 23, No. 2, March 2015, pp. 820 – 827.
17. E. Rezapour, K.Y. Pettersen, P. Liljebäck, J.T. Gravdahl and E. Kelasidi, "Path Following Control of Planar Snake Robots using Virtual Holonomic Constraints: Theory and Experiments", *Springer Robotics and Biomimetics*, 1:3, 2014.
18. T.I. Fossen and K.Y. Pettersen, "On Uniform Semiglobal Exponential Stability (USGES) of Proportional Line-of-Sight Guidance Laws", *Automatica*, Vol. 50, No. 11, 2014, pp. 2912-2917.
19. M. Bjerkgeng, P. Falco, C. Natale and K.Y. Pettersen, "Stability Analysis of a Hierarchical Architecture for Discrete-Time Sensor-Based Control of Robotic Systems", *IEEE Transactions on Robotics*, Vol. 30, No. 3, 2014, pp. 745-752.
20. W. Caharija, K.Y. Pettersen, A.J. Sørensen, M. Candeloro, and J.T. Gravdahl, "Relative Velocity Control and Integral LOS for Path Following of ASVs: Merging Intuition with Theory", *Part M: Journal of Engineering for the Maritime Environment*, Vol. 228, No. 2, 2014.
21. A.A. Eielsen, M. Vagia, J.T. Gravdahl and K.Y. Pettersen, "Damping and Tracking Control Schemes for Nanopositioning", *IEEE/ASME Transactions on Mechatronics*, Vol. 19, No. 2, 2014, pp. 432 - 444.
22. P. Liljebäck, K.Y. Pettersen, Ø. Stavdahl, and J.T. Gravdahl, "Lateral undulation of snake robots: A simplified model and fundamental properties", *Robotica*, 31, 2013, pp 1005-1036.
23. P. Liljebäck, K.Y. Pettersen, Ø. Stavdahl, and J.T. Gravdahl, "Snake robot locomotion in environments with obstacles", *IEEE/ASME Transactions on Mechatronics*, Vol. 17, No. 6, 2012, pp. 1158 - 1169.
24. A.A. Eielsen, J.T. Gravdahl and K.Y. Pettersen, "Adaptive Feed-Forward Hysteresis Compensation for Piezoelectric Actuators", *Review of Scientific Instruments*, Vol. 83, No. 8, 2012.
25. P. J. From, I. Schjøberg, J.T. Gravdahl, K.Y. Pettersen and T.I. Fossen, "On the boundedness property of the inertia matrix and skew-symmetric property of the Coriolis matrix for vehicle-manipulator systems", *ASME Journal of Dynamic Systems, Measurement and Control*, Vol. 134, No. 4, 2012.
26. P. Liljebäck, K.Y. Pettersen, Ø. Stavdahl, and J.T. Gravdahl, "A review on modelling, implementation, and control of snake robots", *Robotics and Autonomous Systems*, Vol. 60, no. 1, 2012, pp. 29-40.
27. P. Liljebäck, I.U. Haugstuen and K.Y. Pettersen, "Path following control of planar snake robots using a cascaded approach", *IEEE Transactions on Control Systems Technology*, Vol. 20, No. 1, 2012, pp. 111-126.
28. P.J. From, K.Y. Pettersen, and J.T. Gravdahl, "Singularity-Free Dynamic Equations of Spacecraft-Manipulator Systems", *ACTA Astronautica*, Vol. 69, Issues 11-12, 2011, pp. 1057–1065.
29. P. Liljebäck, K.Y. Pettersen, Ø. Stavdahl, and J.T. Gravdahl, "Controllability and stability analysis of planar snake robot locomotion", *IEEE Transactions on Automatic Control*, Vol. 56, No. 6, June 2011, pp. 1365-1380.
30. P. Liljebäck, K.Y. Pettersen, Ø. Stavdahl and J.T. Gravdahl, "Experimental investigation of obstacle-aided locomotion with a snake robot", *IEEE Transactions on Robotics (T-RO)*, Vol. 27, No. 4, 2011, pp. 792-800.
31. E. Børhaug, A. Pavlov, E. Panteley and K.Y. Pettersen, "Straight Line Path Following for Formations of Underactuated Marine Surface Vessels", *IEEE Transactions on Control Systems Technology*, Vol. 19, No. 3, 2011, pp. 493-506.
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