CURRICULUM VITAE

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Associate Professor,
Academic Program Director for BEng in Mechanical Engineering,
Department of Mechanical and Industrial Engineering, NTNU
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Education

2001-2006	Dr. ing., Norwegian University of Science and Technology (NTNU), Trondheim, Norway, supervisor Professor Arvid Næss Thesis title: "Time-variant reliability of dynamic systems by importance sampling and probabilistic analysis of ice loads" 1503-8181; 2006:139, http://hdl.handle.net/11250/236389
1998-2000	Siv. Eng. Applied Mechanics, the Moscow Power Engineering Institute (Technical University), Moscow, Russia Graduated with honors, rewarded by the 2nd place in All-Russian Competition of Graduate Project DSM (Dynamics and Strength of Machines). Diploma title: "Behavior of a crack in a circular plate under dynamic loading" (in Russian)
1994 – 1998	Bachelor of technical science at the Department of Dynamics and Strength of Machines at MPEI (TU), Moscow Russia

Courses

2018-2019	Leader development program for Academic Program directors (NTNU)
2017-2018	PEDUP Pedagogic program for NTNU employees
2017	PhD-supervisor Seminar (NTNU)
2014-2015	Series of internal courses "Project Culture" at DNV GL among which "Managing contracts and change orders", "Become a successful hunter"
Feb-2013	Project management the DNV way (3 days)
Sept-2007	Project management course at SINTEF (3 days)

Professional experience

January 2017 – Present Associate Professor, NTNU, Department for Mechanical and Industrial Engineering, Faculty of Engineering

- Academic Programme Director for study programme "Bachelor Mechanical Engineering"
- Teaching and administrative responsibility in Structural and Mechanical Engineering courses:
  - MAST2002 Mechanisms and dynamics (Fall 2020, 2021, 2022, 2023)
  - MAST2007 Machine elements 2 (Buckling, fracture mechanics, fatigue) (Spring 2021, 2022, 2023)
  - TMMT5002 Production efficiency, innovation and product development (Fall 2017-2022)
  - TMAS2009 Mechanical Engineering Design 2 (Spring 2017, 2018, 2019)
  - MAST1001 (Spring 2020) Maskin og prosess
  - INGT1001 (2019, 2020, 2021, 2022) Introduction to Engineering Profession (project part)

    - TMAS3002 (2018, 2019, 2020, 2021) Engineering Systems Thinking (project part – Sustainability by design)
- Supervising PhD, master and bachelor students (45 BEng theses, 14 MSc theses, 1 PhD (expected to submit at the end of 2023) as main supervisor, 3 PhD as co-supervisor)

June 2012 – December 2015 Senior Engineer, DNV GL, Offshore Technology, Trondheim

- PM responsibility and verification of structural design - structural design verification of launching appliances davits for Harding's free fall lifeboat FF1200 and modification of launching appliances davits for Norsafe's free fall lifeboat GES45 (NORSOK R002)
- PM responsibility and verification of structural design - 3rd party Verification of Harding's free fall lifeboat FF1200
- PM responsibility - technical advisory rescue boat davits. The project scope was to advise client on regulations and requirements of NORSOK R002 concerning the design of rescue boat davit.
- Other projects: Design verification of the Portable Offshore Unit according DNV 2.7-3, Structural design verification of the parts of the riser base subsea installation (NORSOK N-004) , CFD analysis of FF (free fall) lifeboats (Star CCM+), Hull strength of existing lifeboats – review report on test results

August 2005 – May 2012 Research Scientist, SINTEF Fisheries and Aquaculture, Department of Aquaculture constructions

- Analysis of the results of wave net interaction experiments
- Hydrodynamic analysis of massive feed barges using program WAMIT
- Study and review of wave and current forces on floating parts of fish cage
- Contribution to revisions of NS9415 standard for marine fish farms
- Implementation of experiments and analyzing the results of project "Torskenot", which objective is to recommend proper netting for cod aquaculture with respect to strength and resistance of netting material to fish bites.
- Measuring of tension loads in mooring lines of a commercial fish farm
- Analysis of spreading of particles with ocean currents and development of website for the project results **sinmod.no**
- FEM analysis of fish cages (ABAQUS), Data analysis, statistics

August 2001 – June 2005 Dr.ing student, Department of Structural Engineering, Norwegian University of Science and Technology, Trondheim, Norway

September 2000 – July 2001 Engineer, Department of Dynamics and Strength of Machines, Moscow Power Engineering Institute (Technical University), Moscow, Russia

- Responsibility: teaching assistance, maintenance of the computer center at the Department

September 1998 – August 2000 Engineer, Department of Engineering Graphics, Moscow Power Engineering Institute (Technical University), Moscow, Russia

- Responsibility: publishing the workbook for the course "Descriptive geometry", maintenance of the computer center at the Department

Scientific publications:

Esmaeilian, S., **Olsen, A.** (2022) Numerical modelling of soluble gas stabilization process as a tool towards full-scale industrialization. 36th EFFoST International conference, Ireland, Dublin, 2022-11-07 - 2022-11-09.

Freyer, M.; Christensen, K. A.; **Olsen, A.**; Steinert, M. (2022) Critical Function Prototyping of an Automated Cleaning System for Photovoltaic Panels. DS 118: Proceedings of NordDesign 2022, Copenhagen, Denmark, 16th - 18th August 2022 How product and manufacturing design enable sustainable companies and societies. https://doi.org/10.35199/NORDDESIGN2022.19

Zhang, L.; **Olsen, A.**; Lobov, A. (2022) An ontology-based KBE application for supply chain sustainability assessment. Resources, Environment and Sustainability. Volum 10. https://doi.org/10.1016/j.resenv.2022.100086

Esmaeilian, S., Rotabakk, B.T., Lerfall, J., Jakobsen, A.N, Abel, N., Sivertsvik, M., **Olsen, A.**, The use of soluble gas stabilization technology on food – A review, Trends in Food Science & Technology, Vol.118 A (2021) pp. 154-166, https://doi.org/10.1016/j.tifs.2021.09.015

Tyflopoulos, E., Hofset, T.A., **Olsen, A**., Steinert, M., Simulation-based design: a case study in combining optimization methodologies for angle-ply composite laminates, Procedia CIRP, Vol. 100 (2021) pp 607-612 https://doi.org/10.1016/j.procir.2021.05.131

Esmaeilian, S., Haskins, C., **Olsen, A.** (2021) Systems Engineering Design of Food Processing Equipment to Integrate Sustainability. 35th EFFoST International Conference in Healthy Individuals, Resilient Communities, and Global Food Security, Switzerland, Lausanne, 2021-11-01 - 2021-11-04.

Tyflopoulos, E.; Flem, D. T.; Steinert, M.; **Olsen, A.** (2018) State of the art of generative design and topology optimization and potential research needs. I: DS 91: Proceedings of NordDesign 2018, Linköping, Sweden, 14th - 17th August 2018 DESIGN IN THE ERA OF DIGITALIZATION. The Design Society 2018. ISBN 978-91-7685-185-2. s. –

Tyflopoulos, E.; Steinert, M.; **Olsen, A.**; Falch, E. (2018) Extending shelf life and reducing waste - technologies in the food industry. First International Symposium: Sustainable technologies for food processing and preservation.; 2018-02-08 - 2018-12-09

Olsen, A.; Lerfall, J., Bar, E.M.S.; Thevik, K.; Rotabakk, B.T.. (2017) Developing an industrial scale processing line for muscle food using Soluble Gas Stabilization (SGS) technology. EFFoST2017; 2017-11-13 - 2017-11-16.

Gansel LC, Plew DR, Endresen PC, **Olsen A**, Misimi E, Guenther J, et al. (2015) Drag of Clean and Fouled Net Panels – Measurements and Parameterization of Fouling. PLoS ONE 10(7): e0131051. doi:10.1371/journal.pone.0131051

Stene A., Bang Jensen, B., Knutsen, Ø., **Olsen, A.** and Viljugrein, H. (2013) Seasonal increase in sea temperature triggers pancreas disease outbreaks in Norwegian salmon farms. Journal of Fish Diseases. 37(8):739-751. doi:10.1111/jfd.12165

I.V.Vodyanova, I.Storrø, **A.Olsen**, T.Rustad (2012) Mathematical modeling of mixing of salt in minced meat by bowl-cutter, Journal of Food Engineering, 112(3), 144-151. doi:10.1016/j.jfoodeng.2012.03.020

Moe, H., Hopperstad, O.S, **Olsen, A.,** Jensen, Ø., Fredheim, A. (2009) Temporary-creep and post-creep properties of aquaculture netting materials, Ocean Engineering 09/2009; 36(12):992-1002. DOI:10.1016/j.oceaneng.2009.05.009

Moe, H., Gaarder, R., **Olsen, A.**, Hopperstad, O.S. (2009) Resistance of aquaculture net cage materials to biting by Atlantic Cod (Gadus morhua) Aquacultural Engineering 05/2009; 40(3):126-134. DOI:10.1016/j.aquaeng.2009.02.001

Moe, H., **Olsen, A.**, Hopperstad, O.S., Jensen, Ø., Fredheim, A. (2007) Tensile properties for netting materials used in aquaculture net cages. Aquaculture Engineering, 37(3):252-265. doi:10.1016/j.aquaeng.2007.08.001.

Lader, P., **Olsen, A.**, Jensen, A., Sveen, J.K., Fredheim, A., Enerhaug, B. (2007) Experimental investigation of the interaction between waves and net structures - Damping mechanism, Aquacultural Engineering, 37(2):100-114. doi:10.1016/j.aquaeng.2007.03.001.

A. Ivanova Olsen and A. Naess. (2007) An importance sampling procedure for estimating failure probabilities of nonlinear dynamic systems subjected to random noise, International Journal of Non-Linear Mechanics, 42(6):848-863. doi:10.1016/j.ijnonlinmec.2007.03.014

A. Ivanova Olsen and A. Naess. (2006) Estimation of failure probabilities of linear dynamic systems by importance sampling. Sadhana - Academy Proceedings in Engineering Sciences, v 31, n 4, August, 2006, pages 429-443.

A. Ivanova Olsen and A. Naess. (2005) Importance sampling for dynamic systems by approximate calculation of the optimal control function. In A. Wilson, N. Limnios, S. Keller-McNulty, and Y. Armijo, editors, Modern Statistical and Mathematical Methods in Reliability, volume 10 of Series on Quality, Reliability and Engineering Statistics, chapter 24, pages 339–352. World Scientific Publishing, Singapore, 2005.

A. Ivanova Olsen and Naess, A. (2005). Estimating failure probabilities of nonlinear dynamic systems subjected to coloured noise by an importance sampling procedure. In Proc. ICOSSAR, Joint Specialty Conference on Probabilistic Mechanics and Structural Reliability, 20-23 June 2005, Rome, Italy.

A. Ivanova and Naess, A. (2004)**.** An importance sampling procedure for estimating failure probabilities of dynamic systems. In Proceedings 9th ASCE Joint Specialty Conference on Probabilistic Mechanics and Structural Reliability, July 2004, Albuquerque, New Mexico, USA.

Open reports:

Olsen, A., Volent, Z. (2009) Utvikling av sikre oppdrettsanlegg Fase 1 – Måleresultat fra feltmålinger ved oppdrettsanlegget Farmansøya. Open SINTEF report SFH80-A096050. February 2009.

Olsen, A., Lien, E. (2009) Utvikling av sikre oppdrettsanlegg Fase 1 – Sammenligning av måledata og numerisk analyse for lokalitet Farmansøya, Open SINTEF report SFH80 A096051, October 2009.

Moe, H.; Gaarder, R.; **Olsen, A**. (2008) Torskenot - riktig valg av not i oppdrett av torsk. Sluttrapport. : SINTEF rapport 2008 (ISBN 9788214043440) 59 s. SINTEF Rapport

Føre, H. M.; **Olsen, A**. (2006) Forprosjekt: Kunnskap om notkvalitet og notbehandling for å hindre rømming fra torskeoppdrett. : SINTEF rapport 2006 (ISBN 8214039606) 24 s. SINTEF Rapport(A064067)