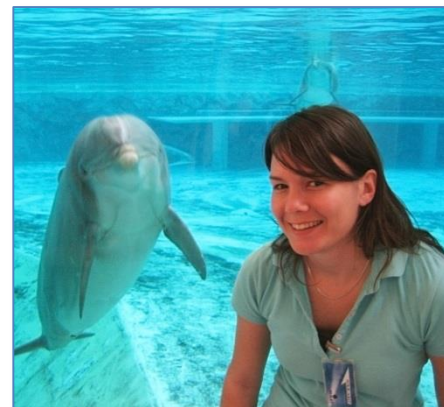


Curriculum vitae – CV

Karin Maria Josefin Starkhammar
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 josefin.starkhammar@bme.lth.se



Year of birth: 1981.

Marital status: Engaged to be married, mother of two.

Nationality: Swedish.

Language proficiency: Swedish (native speaker), English (fluent), German (intermediate).

Research area: Marine biosonar research. Development and/or application of novel technological tools for marine acoustic research. Such tools include computer based measurement systems, acoustic FEM modelling, programming and signal processing of acoustic data.

Education

<i>Start</i>	<i>End</i>	<i>Education</i>	<i>City</i>	<i>Affiliation</i>
2/2 2016	29/3 2016	Readership course	Lund	Lund University
4/11 2015	6/11 2015	Performance driven leadership for Production team leaders	Karlskrona	Saab Kockums AB
2013	2014	luPOD (Lund University Postdoctoral Program)	Lund	Lund University
2007	2013	Pedagogy course for higher education: Introduction to teaching and learning in higher education (3 Hp) The good lecture (3 Hp) Aspects of gender psychology in teaching –women, men and technology (3 Hp)	Lund	Lund University
1/3 2006	20/5 2011	PhD student program including teaching undergrad students for 20% of the time	Lund	Lund University
13/8 2001	21/12 2005	Master of Science program in Engineering Physics	Lund	Lund University
8/7 2002	7/8 2002	Philosophy course: Environmental ethics	Lund	Lund University
10/6 2002	11/7 2002	Philosophy course: Ethics and technology	Lund	Lund University
19/1 2001	5/6 2001	Academic studies preparation course: Theory of science and methodology of research (20 Hp in previous point system, worth 20 weeks of full time studies).	Lund	Lund University
1997	2000	Senior high school, (Science as main subject) Graduation score: 19,56 (out of 20)	Mjölby	Kungshögskolan
1988	1997	Elementary school, (music orientated) Graduation score: 4,4 (out of 5)	Linköping	Linköpings Musikklasser

Employments

<i>Start</i>	<i>End</i>	<i>Position, employer</i>	<i>City</i>
13/2 2017	-	Assistant professor, Lund University, Faculty of Engineering LTH	Lund
1/4 2015	10/2 2017	Specialist and Senior Development Engineer, Saab Kockums AB	Malmö
1/11 2014	31/3 2015	Assistant professor, Lund University, Faculty of Engineering LTH	Lund
18/11 2013	31/3 2015	Researcher, FOI	Stockholm
1/7 2011	31/10 2014	Postdoctor, Lund University, Faculty of Engineering LTH	Lund
1/3 2006	20/5 2011	PhD student, Lund University, Faculty of Engineering LTH	Lund
6/1 2004	21/12 2005	Assistant teacher, Lund University, Faculty of Engineering LTH	Lund
27/6 2005	5/8 2005	Medical technical engineer, Linköpings Universitetssjukhus, Östergötlands läns landsting	Linköping
14/6 2004	8/8 2004	Medical technical engineer, Linköpings Universitetssjukhus, Östergötlands läns landsting	Linköping
23/6 2003	10/8 2003	Medical technical engineer, Linköpings Universitetssjukhus, Östergötlands läns landsting	Linköping
2/4 2001	22/7 2001	Salesman in pet shop, ZOOAB, Atheris AB	Löddeköpinge
1/6 1999	30/9 1999	Waitress, Burger King	Linköping

Scientific awards and research grants

Winner of the “Award for outstanding poster presentation at the 5th Animal Sonar Symposium”, Kyoto, Japan, 2009 for “an outstanding contribution towards understanding the nature of biosonar”.

Winner of the award “Best Student Presentation” at the annual conference of the European Association for Aquatic Mammals, March 7-10, 2008, Kolmården, Sweden.

Winner of the “Fred Fairfield Memorial Award for Innovative Marine Mammal Research” presented at the 17th Biennial Conference on the Biology of Marine Mammals, November 29 – December 3 2007, Cape Town, South Africa.

Commissions of trust

<i>Start</i>	<i>End</i>	<i>Organisation</i>	<i>Position</i>
2015	today	Peer reviewer	British Journal of Mathematics & Computer Science
2015	today	Peer reviewer	The Journal of Experimental Biology
2014	today	Peer reviewer	PLOS One
2013	today	Peer reviewer	The Acoustical Society of America

2008	today	Peer reviewer	The British Journal on Developmental Psychology
2008	today	Peer reviewer	Bioinspiration & Biomimetics
15/6 2008	15/6 2008	Book reviewer	Animal Welfare
9/2 2004	8/2 2006	Board member	Stävie Horse Back Riding Club, Lund, Sweden

Awarded grants and scholarships

Travel grants

- Scholarship from Sten K Johnssons Stiftelse for Entrepreneurship, 2015
- Travel grants from The Royal Physiographic Society in Lund 2008, 2009 and 2010.
- Travel grant from “Stiftelsen Anna Nilssons fond för vetenskaplig forskning”, 2008.
- Travel grant from “Stiftelsen Landshövding Per Westlings minnesfond”, 2007.
- Travel grant from “Stiftelsen Sigfrid och Walborg Nordqvist”, 2007.

Other grants

- Young Investigator’s research grant from the Swedish Research Council, Principal Investigator, 2016 (800 000 SEK/year during three years)
- Scholarship for entrepreneurship from Sten K. Johnssons foundation, 2015, (100 000 SEK).
- Post doctoral research grant from the Faculty of Engineering LTH, Lund University, 2011.
- Research grant from The Royal Physiographic Society in Lund for young scientists, 2007, (87 000 SEK).
- Scholarship for entrepreneurship, awarded by “Innovationsbron Syd”, 2007 (100 000 SEK)
- Scholarship for “outstanding achievement in biology”, awarded by The Swedish Society for Nature Conservation, Sweden, 2000.

Teaching experiences

Course responsibility:

- Computerized Measurement Systems (EEM070) (Advanced level course), at LTH, Lund University 2012-2016.

Main supervisor of Master’s Thesis projects:

- Malin Magnusson, working title: “Detection of equestrian falls using smartphone sensors”, at the Biomedical Engineering program, LTH, Lund University, October 2016-March 2017(ongoing).
- Andreas Blixt, “Calibration and characterization of the ELVIS hydrophones” at the Electrical Engineering program, LTH, Lund University (30 Hp), 2013.
- Patrik Öhlin, “Calibration and characterization of the ELVIS hydrophones” at the Electrical Engineering program, LTH, Lund University (30 Hp), 2013.

Supporting supervisor of Master’s Thesis projects:

- Olsén, H. (2007) “First application of ELVIS- an Echolocation Visualization and Interface System for dolphins”, (60 HP), Master’s Thesis, Linköping University.
- Dahl, S. (2007) “Target detection in coral sand by bottlenose dolphin (*Tursiops truncatus*)”, (60 HP), Master’s Thesis, Linköping University.

Teacher in the following courses at LTH, Lund University:

- Computerized Measurement Systems (EEM070), advanced level, 2012, 2010, 2009, 2008 and 2007
- Electrical Measurements (EEM007), basic level, mandatory for F3, 2013, 2010, 2008, 2006 and 2005
- Electrical Measurements (ESSF10), basic level, mandatory for E3, optional for D4, 2010, 2008, 2006 and 2005
- Ultrasound Physics and Technology (EEM080), 2013, 2010.
- Transducer Technology (EEM031), basic level, optional for C4, D4, E3, F3, 2006 and 2007
- Ultrasound Physics and Technology (EEM080), advanced level, optional for D5, E4mt, E4ss, F4, F4mt, 2007, 2008, 2009

Guest lectures:

- I have held a presentation with the title “Ways to communicate with dolphins” in an astrobiology group seminar at Lund University 2013.
- I have demonstrated the research performed at the department to the public at the “Teknikens dag” 2006, 2007 and 2008
- I have given inspirational lectures in “Dolphin echolocation research at LTH” to high school students visiting Lund University, Faculty of Engineering LTH 2007, 2008 and 2009, at “Sydskånska Gymnasiet” in Ystad, Sweden 2009 and at the Department of Zoophysiology, Lund University, 2008.

Other merits

The research within my PhD project has frequently been reported to the public in many different formats, ranging from newspaper articles and TV broadcasts to youth educational contexts. Here are a few examples:

- Reportage in Formas' newsletter Miljöforskning <http://miljoforskning.formas.se/sv/Nummer/Juni-2011/Innehall/Ovriga-artiklar/Dubbelstrale-battrar-pa-delfinens-ekolod/>
- <http://www.ur.se/Produkter/169710-UR-Samtiden-Lundaforskare-forelaser-Snacka-med-delfiner>
- <http://lokaltidningen.se/dod-tummlare-ovantat-strandfynd-/20150804/artikler/308049998/1465>
- Reportage in Science Daily, 2011: <http://www.sciencedaily.com/releases/2011/06/110607112338.htm>
- Reportage in Ny Teknik 2011 :
(http://www.nyteknik.se/nyheter/innovation/forskning_utveckling/article3187568.ece)
- Part of the exhibition ”Djuriskt!” 2011 in ”Visualiseringscenter C” in Norrköping
(<http://www.visualiseringscenter.se/index/sv/>)
- BBC filmed and produced a TV program series called “Extraordinary Animals” in which one entire episode was about the research performed with the ELVIS-system that I developed. (The filming occurred in October 8-9, 2008). The production has been broadcasted worldwide.
- Radio broadcasted program by SR Östergötland 9/6 2007.
- Radio broadcasted program by Ekot SR 25/9 2007.
- TV- broadcasted interview by Sydnytt 25/9 2007.
- Reportage in LO-tidningen 2009, Aftonbladet 2007 and Östgota Correspondenten 2007
- Theme package at the website of Nationalencyklopedin, ”NE Skola” visited by thousands of teachers and elementary school students every week (Source: Nationalencyklopedin) (Direct link: <http://www.ne.se/repj/delfinjud-som-forsknings%C3%A4mne>)
- Reoccurring part of ”Ljudshowen” in ”Vattenhallen” in Lund since 2009.

Deductible time

<i>Reason</i>	<i>Total time</i>	<i>Start date</i>	<i>End date</i>
Parental leave of absence	521 days	2011-10-29	2017-01-17

Publication lists

The five publications that I rank the highest are marked with *.

1 List of scientific journal publications

*Bjurström, H., Gudmarsson, A., Ryden, N., **Starkhammar, J.**, (2016) Field and laboratory stress-wave measurements of asphalt concrete, *Construction and Building Materials*, 126, 508-516. <http://dx.doi.org/10.1016/j.conbuildmat.2016.09.067>

Starkhammar, J., Hansson-Sandsten, M. (2015) Evaluation of Seven Time-Frequency Representation Algorithms Applied to Broadband Echolocation Signals, *Advances in Acoustics and Vibration*, Article ID 342503, 13 pages. doi:10.1155/2015/342503

Starkhammar, J., Nilsson, J., Amundin, M., Jansson, T., Almqvist, M., Persson., H. W. (2012) Design and benchmark tests of a hydrophone array system for whale echolocation recordings, *Open Journal of Acoustics*, 2, 121-130.

Starkhammar, J. Measuring the cross section of the dolphin echolocation beam – Instrumentation design and bioacoustic results. (2011) Doctoral dissertation. Lund University ISBN 978-91-7473-114-9, ISSN 0346-6221

***Starkhammar, J.**, Moore, P. W. B., Talmadge, L., and Houser, D. S. (2011). Frequency-dependent variation in the two-dimensional beam pattern of an echolocating dolphin, *Biol. Lett.*, 7, 6, 836-839, doi: 10.1098/rsbl.2011.0396.

***Starkhammar, J.**, Nilsson, J., Amundin, M., Jansson, T., Almqvist, M., Persson., H. W. (2011) Separating overlapping dolphin click trains originating from multiple individuals in echolocation recordings, *J. Acoust. Soc. Am.*, 129 (1), 458-466.

***Starkhammar, J.**, Amundin, M., Nilsson, J., Jansson, T., Kuczaj, S., Almqvist, M., Persson., H. W. (2009) 47-channel burst-mode recording hydrophone system enabling measurements of the dynamic echolocation behavior of free-swimming dolphins. *J. Acoust. Soc. Am.*, 126 (3), 959-962.

*Amundin, M., **Starkhammar, J.**, Evander, M., Almqvist, M., Lindstrom, K., Persson, H. W. (2008). An echolocation visualization and interface system for dolphin research. *J. Acoust. Soc. Am.*, 123 (2), 1188-1194.

Starkhammar, J., Amundin, M., Olsén H., Almqvist, M., Lindstrom, K., Persson, H. W. (2007). Acoustic Touch Screen for Dolphins, First application of ELVIS - an Echo-Location Visualization

and Interface System, In: Proceedings of the Institute of Acoustics, 29, pp 55-60, Loughborough University, Loughborough, UK.

2 Conference contributions

Starkhammar, J., Reinhold, I., Sandsten, M., Houser, D. S., Moore, P. W. (2016) Intra-click time-frequency patterns across the echolocation beam of a beluga whale. *J. Acoust. Soc. Am.* 140(4):3239-3239. 5th Joint Meeting of the Acoustical Society of America and Acoustical Society of Japan, Honolulu Hawaii. DOI: 10.1121/1.4970244

Houser, D. S., Talmadge, L., **Starkhammar, J.**, Moore, P., (2016) Beam patterns of the dolphin demonstrate task-dependent dynamics, *J. Acoust. Soc. Am.* 140 (4):3179-3179, 5th Joint Meeting of the Acoustical Society of America and Acoustical Society of Japan, Honolulu Hawaii. DOI: 10.1121/1.496999

Starkhammar, J., Reinholdt, I., Sandsten, M., (2016) Intra-click frequency patterns across the echolocation beam of a beluga whale, ETAS Underwater Acoustics Technology Meeting, November, 2016, Rio de Janeiro, Brazil

Bjurström, H., Gudmarsson, A., Ryden, N., **Starkhammar, J.**, (2016) Comparative seismic laboratory and non-contact field measurements of asphalt concrete, NDE/NDT for Highways and Bridges: Structural Materials Technology, Portland, OR, USA

Reinholdt, I., **Starkhammar, J.**, Sandsten, M., (2016) Localising the source(s) of dolphin echolocation signals, eSENCE Academy, October 12-13, 2016, Lund, Sweden.

Sandsten, M., **Starkhammar, J.**, (2013) A refined time-frequency reassignment technique applied to dolphin echolocation signals, IEEE International Conference on Acoustics, Speech, and Signal Processing, Florence, Italy, May 4-9. (The paper was accepted. However, both Sandsten and Starkhammar was unexpectedly held up and unable to attend the conference. Therefore the paper was automatically withdrawn. The paper is to be submitted elsewhere.)

Starkhammar, J., Dankiewicz-Talmadge, L. A., Houser, D. S., Moore, P. W. (2010) Frequency-dependent echolocation beam pattern of the bottlenose dolphin, *J. Acoust. Soc. Am.* 128 2484. Presented at the ASA conference November 15-19, Cancun, Mexico.

Starkhammar, J., Nilsson, J., Amundin, M., Jansson, T., Almqvist, M., Persson, H. W. (2009) Separating overlapping dolphin click trains originating from multiple individuals in echolocation recordings, Abstract for the 5th Animal Sonar Symposium, September 14-19, Kyoto, Japan.

Starkhammar, J., Nilsson, J., Amundin, M., Jansson, T., Almqvist, M., Persson, H. W., (2009) "Measurement and data analysis method enabling sonar studies on multiple free-swimming and spontaneously echolocating dolphins," proceeding in 3rd international conference on Underwater Acoustic Measurements, 2009.

Starkhammar, J., Kuczaj, S. A., Amundin, M., Nilsson, J., Almqvist, M., Persson, H. W. (2008). The dynamics of the bottlenose dolphin sonar beam, J. Acoust. Soc. Am. 124 2506, Presented at ASA conference November 10-14, 2008, Miami, USA.

Starkhammar, J., Amundin, M., Olsén, H., Dahl, S., Almqvist, M., Lindström, K., Persson H. W. (2007). Design and evaluation of a new tool for echolocation measurements, Abstract for 17th Biennial Conference on the Biology of Marine Mammals, November 29 – December 3 2007, Cape Town, South Africa.

Starkhammar, J., Amundin, M., Olsén H., Almqvist, M., Lindstrom, K., Persson, H. W. (2007). Acoustic Touch Screen for Dolphins, First application of ELVIS - an Echo-Location Visualization and Interface System, In: Proceedings of the Institute of Acoustics, 29, pp 55-60, Loughborough University, Loughborough, UK.

Starkhammar, J., Amundin, M., Almqvist, M., Lindström, K., Persson, H. W. (2008) A tool for visualizing odontocetes' sonar beam axis location and intensity variations, Abstract for the annual conference of the European Association for Aquatic Mammals, March 7-10, 2008, Kolmården, Sweden.