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My research is on mobile robot perception and navigation. My projects have ranged from large EU integrated projects building complex robotic system to smaller nationally funded projects focused on specific areas. While employed at Massachusetts Institute of Technology, MIT, Department of Ocean Engineering, I worked on underwater navigation of AUV's, which included lead responsibility for building large complex robotic software systems. The innovations in these systems included new ways of navigating underwater using sonar to correct dead-reckoning errors and recognize places seen on a prior visit. Recently my work has expanded into machine learning and artificial intelligence. Also I am actively researching on autonomous driving in the area of multi-agent scene understanding.

### Relevant Employments

20151101 -present	Associate Professor in Robotics	permanent	KTH
20131101-20151031	Assistant Professor in Robotics	conditional	KTH
20100801-20131030	Researcher in Robotics	permanent	KTH
20070701-20071231	Researcher, Centre for Autonomous System	project	KTH
20070801-20100731	Research Scientist in Underwater Robotics	permanent	MIT
20060101-20070731	Post-doctoral Fellow, Massachusetts Institute of Technology	time limit	MIT
20060316-20060630	Researcher, Centre for Autonomous Systems	project	KTH
2002-20051231	PhD student, Centre for Autonomous Systems	time limit	KTH
2001-2002	Research Engineer, Centre for Autonomous Systems	project	KTH

### Grants

Period	Project Name	Funding Agency	Role	Total	KTH	
2017-2024	Swedish Marine Robotics Center	SSF (IRC15-0046)	PI	100 <sup>1</sup>	27	MSEK
2016-2020	iPilot	VINNOVA/FFI (2016-02547)	PI	17.6	4.4	MSEK
2015	Competence invest. underwater...	FMV Contract (386225-LB884867)	PI	2.65	0.350	MSEK
2015-2018	CENTAURO	EU H-2020 (644839)	PI	4	0.490	MEURO
2013-2017	STRANDS	EU FP-7 (600623)	PI	8	1.4	MEURO
2013-2017	iQMatic	VINNOVA/FFI 2012-04626	PI	36 <sup>2</sup>	4.2	MSEK
2011	ECHORD "MUCE"	EU FP-7	PI	0.03		MEURO
2011	Interactive articulated robot head	CSC/KTH	Leader	0.17	0.17	MSEK

### A Selection of Expert Assignments

2017	Netherlands Organization for Scientific Research, Veni Scheme, Grant Reviewer
2017	Doctoral thesis committee member Thomas F�ulhammer, TUW, Austria, 2017
2017	Doctoral thesis committee member Stefan Ericsson, Sk�vde
2015	Selection Committee for recipients of the AAAI Robotics Fellowships
2015	Expert evaluation of Bj�rn �strand's application for Docent at Halmstad University
2015	Doctoral thesis committee member Malin Lundgren, Chalmers
2013	Doctoral thesis committee member Mattias Jacobsson, KTH
2012-2017	Journal 'Robotics' Editorial board
>10 years	IEEE RAS Reviewer: average 5 Conferences and 3 Journals articles per year.
2014	The AAAI Workshop on Artificial Intelligence and Robotics Program Committee
2006-2008, 2014-2015	Conference RSS: Robotics, Science and Systems Program Committee
2008	IROS Program committee
2014	IROS Associate Editor

### Higher education qualification

20120629	Docent in Robotics	KTH - Royal Institute of Technology, Sweden	
20060615	PhD in Robotics: Dissertation: Supervisor:	KTH - Royal Institute of Technology, Sweden "Simultaneous Localization and Mapping with Robots" Prof. Henrik Christensen	
20010824	MSc Computer Science, Thesis:	KTH - Royal Institute of Technology, Sweden "Projection of a Markov Process with Neural Networks"	GPA 4.7/5.0
1983-1986	University Fellowship	State University of New York at Stonybrook, PhD Candidate in Theoretical Physics.	GPA 3.8/4.0
19830602	BA in Physics, Honors:	Queens College of the City University of New York, Magna Cum Laude, Honors in Physics, Phi Beta Kappa Womens Club Award Annual award for outstanding graduate, Paul Klapper Physics Award to Top physics student, Chancellors Honor Roll highest academic distinction,	GPA 4.1/4.3,
1978-1979	Engineering Student	Cooper Union College, New York,	

<sup>1</sup>includes 25MSEK to be confirmed after halftime evaluation

<sup>2</sup>includes a continuation grant with diary number 2013-03964

### Professional Memberships

IEEE member Since 2002  
IEEE RAS Robotics and Automation Society member since 2006  
IEEE Oceanic Engineering Society member since 2014  
IEEE ITS Intelligent Transport Systems Society member since 2013  
SAIS Swedish Artificial Intelligence Society Member of the Board since 2014

### A Selection of Invited Speaker, Public Exhibits and Demonstrations

- 2014 Exhibited my research at the Technical Museum in Stockholm for the ITC TNG 'Research Ongoing' Exhibit.
- 2009 Invited speaker, Workshop on Machine Intelligence for Autonomous Operations, Villa Marigola, Lerici Italy
- 2007 ONR and NSWC AUV Fest, Naval Surface Warfare Center, Panama City, Florida
- 2008 ONR and NOAA AUV Fest, Naval Undersea Warfare Center (NUWC) in Newport, Rhode Island

### Supervision

Post Docs:	Marina Alberti	Zhan Wang	Hakan Karaoguz
PhD Main Supervisor:	Luis Fernando Cabarique Buitrago	Louise Rixon Fuchs	Ignacio Torroba
PhD Main Supervisor:	Joonatan Mänttari,	Nils Bore,	Erik Ward
PhD Co-Supervisor:	Jiexiong Tang	Xi Chen	Johan Ekekrantz
PhD Co-Supervisor:	Akshaya Sridatta Thippur	Rares Ambrus	Rasmus Göransson
PhD Co-Supervisor:	Alper Aydemir		
Master thesis:	>20 completed		

### Bibliometrics:

48 peer-reviewed articles; 1148 citations; H-index: 17

<https://scholar.google.se/citations?user=MAK1U6UAAAAJ&hl=en>

### 10 Selected scientific publications:

- 2017 Autonomous learning of object models on a mobile robot;  
T Fulhammer, R Ambrus, C Burbridge, M Zillich, J Folkesson, N Hawes,...  
IEEE Robotics and Automation Letters, vol 2, issue 1, p 26-33, DOI: 10.1109/LRA.2016.2522086
- 2016 Interaction aware trajectory planning for merge scenarios in congested traffic situations; N Evestedt, E Ward, J Folkesson, D Axehill  
IEEE Intelligent Transportation Systems (ITSC) DOI: 10.1109/ITSC.2016.7795596
- 2015 Unsupervised learning of spatial-temporal models of objects in a long-term autonomy scenarios; R Ambrus, J Ekekrantz, J Folkesson, P Jensfelt  
IEEE Intelligent Robots and Systems (IROS) DOI: 10.1109/IROS.2015.7354183
- 2014 Combining top-down spatial reasoning and bottom-up object class recognition for scene understanding; L Kunze, C Burbridge, M Alberti, A Thippur, J Folkesson,...  
IEEE Intelligent Robots and Systems (IROS) DOI: 10.1109/IROS.2014.6942963
- 2013 Relocating underwater features autonomously using sonar-based SLAM;  
MF Fallon, J Folkesson, H McClelland, JJ Leonard  
IEEE Journal of Oceanic Engineering, vol 38, issue 3, p 500-513 DOI: 10.1109/JOE.2012.2235664
- 2013 Simultaneous localization and mapping in marine environments;  
MF Fallon, H Johannsson, M Kaess, J Folkesson, H McClelland, B Englot,...  
Marine Robot Autonomy, Springer, p 329-272 DOI: 10.1007/978-1-4614-5659-9\_8
- 2011 Autonomy through SLAM for an underwater robot;  
J Folkesson, J Leonard  
Robotics Research: The 14th International Symposium ISRR, p 55-70 DOI: 10.1007/978-3-642-19457-3\_4
- 2007 Feature tracking for underwater navigation using sonar;  
J Folkesson, J Leonard, J Leederkerken, R Williams  
IEEE Intelligent Robots and Systems, IROS DOI: 10.1109/IROS.2007.439 9201
- 2007 Closing the loop with graphical SLAM;  
J Folkesson, HI Christensen  
IEEE Transactions on Robotics, vol 23, issue 4, p 731-741 DOI: 10.1109/TRO.2007.900608
- 2007 The M-space feature representation for SLAM;  
J Folkesson, P Jensfelt, HI Christensen  
IEEE Transactions on Robotics, vol 23, issue 5, p 1024-1035, DOI: 10.1109/TRO.2007.903807