

BORN:	September 10, 1974 in Oslo, Norway	
NATIONALITY:	Norwegian	
CONTACT INFORMATION	The Cloud Department Simula Research Laboratory P.O.Box 134, 1325 Lysaker, Norway	<i>Voice:</i> (+47) 996 44 916 <i>E-mail:</i> ernstgr@simula.no <i>WWW:</i> http://simula.no/people/ernstgr
CURRENT POSITIONS	Head of the Cloud Department at Simula Research Laboratory. Associate Professor at Department of Informatics, University of Oslo.	
RESEARCH INTERESTS	Cloud computing, virtualization, holistic resource management, high performance computing (HPC), high performance interconnection networks, software defined networking, congestion management, congestion control, test-bed architectures, multi-homing.	
EDUCATION	Philosophiae Doctor (Ph.D.), <i>Simula Research Laboratory/University of Oslo, Norway</i> Thesis: Congestion Management in Lossless Interconnection Networks	2014
	Candidatus Scientiarum (Master), <i>Department of informatics, University of Oslo, Norway</i> Thesis: Routing, flow control and buffer sizes in Ethernet as an interconnection network.	2007
	Candidatus Magisterii (Bachelor), <i>Department of informatics, University of Oslo, Norway</i>	2000
OTHER COURSES	One-year course in leadership (5 weekends + practice)	1993 – 1994
MILITARY SERVICE	Squad leader Commander of the watch Shop steward (Later applied for and transferred to civilian national service, 1998)	1996
WORKING EXPERIENCE	Associate Professor, <i>Department of Informatics, University of Oslo, Norway</i>	2015 - present
	Head of Department, <i>Simula Research Laboratory, Norway</i> Head of the Cloud Department at Simula Research Laboratory, a department conducting world-class research and innovation in the intersection between HPC interconnection networks, cloud computing, and big data.	2014 - present
	Research Engineer, <i>Simula Research Laboratory, Norway</i> In charge of developing and installing the initial NorNet Core experimental test-bed infrastructure, a flexible and programmable network for measurement studies and experimental networking protocols. (https://www.nntb.no/nornet-core/)	2011 - 2014

Ph.D. Student, 2007 - 2011
Simula Research Laboratory, Norway
Research focusing on congestion management in interconnection networks in general, and congestion control in InfiniBand in particular.

Scientific Programmer, 2005 - 2007
Simula Research Laboratory, Norway

Student Consultant, part-time 2002 - 2003
Microsoft, Norway

System Administrator, 1999 - 2005
Department of informatics, University of Oslo, Norway

Server Side Web Developer, summer 2000
Cap Gemini Ernst & Young, Norway

Civilian National Service, 1998 - 1999
Department of informatics, University of Oslo, Norway

Teaching Assistant, fall '98/'99
Department of informatics, University of Oslo, Norway

MISCELLANEOUS Member of the Simula Research Laboratory Board of Directors 2013 - present
Program Committee member of the iFMCloud Workshop 2016
Program Committee member of the HiPINEB Workshops 2015 - present
Program Committee member of the PAMS Workshops 2013 - 2015

SUPERVISION Currently: 2 PhD students and 6 MSc students at Department of informatics, University of Oslo
Currently: 1 PhD students at Department of Computer Science, University of New Hampshire
2013-2015: 5 MSc students at Department of informatics, University of Oslo

SELECTED PUBLICATIONS J. Escudero-Sahuquillo, E. G. Gran, P. J. Garcia, J. Flich, T. Skeie, O. Lysne, F. J. Quiles, and J. Duato. **Efficient and Cost-Effective Hybrid Congestion Control for HPC Interconnection Networks**, IEEE Transactions on Parallel and Distributed Systems 26(1), IEEE Computer Society, 2015.

E. Tasoulas, E. G. Gran, B. D. Johnsen, K. Begnum, and T. Skeie. **Towards the InfiniBand SR-IOV vSwitch Architecture**, IEEE Cluster, 2015.

F. Zahid, E. G. Gran, B. Bogdanski, B. D. Johnsen, and T. Skeie. **SlimUpdate: Minimal Routing Update for Performance-based Reconfigurations in Fat-Trees**, 1st IEEE International Workshop on High-Performance Interconnection Networks Towards the Exascale and Big-Data Era (HiPINEB), 2015.

F. Zahid, E. G. Gran, B. Bogdanski, B. D. Johnsen, and T. Skeie. **Partition-Aware Routing to Improve Network Isolation in InfiniBand Based Multi-Tenant Clusters**, 15th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid), 2015.

E. Tasoulas, E. G. Gran, T. Skeie, and B. D. Johnsen. **A Novel Query Caching Scheme for**

Dynamic InfiniBand Subnets, 15th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid), 2015.

F. Zahid, E. G. Gran, B. Bogdanski, B. D. Johnsen, and T. Skeie. **A Weighted Fat-Tree Routing Algorithm for Efficient Load-Balancing in InfiniBand Enterprise Clusters**, Proceedings of the 23rd Euromicro International Conference on Parallel, Distributed Network-based Processing (PDP), 2015.

E. G. Gran, T. Dreibholz, and A. Kvalbein. **NorNet Core - a Multi-Homed Research Testbed**, Computer Networks Special Issue: Future Internet Testbeds 61(1), 2014.

E. G. Gran. **Congestion Management in Lossless Interconnection Networks**, Ph.D. Thesis, Faculty of Mathematics and Natural Sciences, University of Oslo, 2014.

T. Dreibholz, and E. G. Gran. **Design and Implementation of the NorNet Core Research Testbed for Multi-Homed Systems**, 3rd International Workshop on Protocols and Applications with Multi-Homing Support (PAMS), 2013.

E. G. Gran, Sven-A. Reinemo, O. Lysne, T. Skeie, E. Zahavi, and G. Shainer. **Exploring the Scope of the InfiniBand Congestion Control Mechanism**, In: 2012 IEEE International Symposium on Parallel & Distributed Processing (IPDPS), ed. by Bob Werner, IEEE Computer Society, 2012.

B. Bogdanski, Sven-A. Reinemo, F. O. Sem-Jacobsen, and E. G. Gran. **sFtree: A fully connected and deadlock free switch-to-switch routing algorithm for fat-trees**, ACM Transactions on Architecture and Code Optimization 8(4), 2012.

J. Escudero-Sahuquillo, E. G. Gran, P. J. Garcia, J. Flich, T. Skeie, O. Lysne, F. J. Quiles, and J. Duato. **Combining Congested-Flow Isolation and Injection Throttling in HPC Interconnection Networks**, In: 2011 International Conference on Parallel Processing (ICPP 2011), 2011.

E. G. Gran, E. Zahavi, Sven-A. Reinemo, T. Skeie, G. Shainer, and O. Lysne. **On the Relation Between Congestion Control, Switch Arbitration and Fairness**, In: 11th IEEE/ACM International Symposium on Cluster, Cloud, and Grid Computing (CCGrid 2011), 2011.

E. G. Gran and Sven-A. Reinemo. **InfiniBand Congestion Control, Modelling and validation**, In: 4th International ICST Conference on Simulation Tools and Techniques (SIMUTools2011, OMNeT++ 2011 Workshop), 2011.

E. G. Gran, M. Eimot, Sven-A. Reinemo, T. Skeie, O. Lysne, L. P. Huse, and G. Shainer. **First Experiences with Congestion Control in InfiniBand Hardware**, In: 2010 IEEE International Symposium on Parallel & Distributed Processing (IPDPS), ed. by Cynthia Phillips, IEEE (ISBN: 978-1-4244-6442-5), 2010.

A complete list of publications can be found at www.simula.no/people/ernstgr/bibliography.