

Geir E. Øien: CURRICULUM VITAE

Full name: Geir Egil Dahle Øien¹

Date of birth: 29 December 1965

Nationality: Norwegian

Current position: Full Professor, NTNU

Languages: Norwegian (native), English (fluent), German (basic), French (basic). Also reads and understands Swedish and Danish quite well (but no formal training).

Private address: Stuttvegen 6, 7053 Ranheim, NORWAY

Professional contact info: Postal address: Norwegian University of Science and Technology (NTNU),
Department of Electronic Systems, N-7491 Trondheim, Norway
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Academic degrees

- *Doktor ingeniør* (dr.ing./Ph.D.) from the Department of Telecommunications, Norwegian Institute of Technology (NTH), 1993.
- *Sivilingeniør* (siv.ing./M.Sc.E.E.) from the Department of Telecommunications, NTH, 1989.

Research areas

- Information theory, Communication theory, Wireless communications, Signal processing, Engineering education development

Full-time employment

- January 2022 – December 2022: Sabbatical stay (visiting NTNU professor) at [Aarhus University, Faculty of Technical Sciences](#), Section of Software Engineering and Computing Systems.
- 1 August 2019 – 31 December 2021: Project Manager, [Fremtidens Teknologistudier](#) (Technology Education of the Future), NTNU.
- 1 January 2017 – 31 July 2019: Dean of the [Faculty of Information Technology and Electrical Engineering \(IE\)](#), NTNU.
- 1 August 2009 – 31 December 2016: Dean of the Faculty of Information Technology, Mathematics, and Electrical Engineering (IME), NTNU.
- September 2005 – July 2006: Sabbatical stay (visiting professor) at [EURECOM](#), Mobile Communications Department, Sophia-Antipolis, France.
- Head of Department, Department of Telecommunications, NTNU, Jan. 2002 – Dec. 2003.

¹ Before new marriage on 15 September 2016: Geir Egil Øien.

- May 2001 – present: Full Professor at the [Department of Electronic Systems](#)², [Signal Processing Group](#), NTNU.
- August 1996 – May 2001: Associate Professor at the Department of Telecommunications, Signal Processing Group, NTNU.
- June 1994 - August 1996: Associate Professor at the Department of Electrical Engineering and Computer Science, Signal and Image Processing Group, Stavanger College³.
- June 1993 - June 1994: *Sivilarbeider* (civilian equivalent to compulsory military service) at Trondheim College of Engineering (today a part of NTNU).
- February 1990 - June 1993: Doctoral (dr.ing.) student at the Department of Telecommunications, NTH, financed by a 3-year personal grant from The Royal Norwegian Scientific Council (NTNF) until February 1993.
- August 1988 – February 1990: Research assistant at the Department of Telecommunications, NTH (Transmission Engineering Group).

Scientific and professional management, projects, board positions, appointments, duties and engagements

Internationally:

- Leader, [NORDTEK-ANE](#) Joint Expert Group on Lifelong Learning, 2022 -
- Leader of Local Committee and member of Programme Committee, [The 19th International CDIO Conference 2023](#), 2022 – 2023.
- Member, [NORDTEK](#) Board of Directors, 2021 – 2023.
- Member of Advisory Group for the international study [CEEDA: Collaborative Engineering Education in the Digital Age](#), 2021 - 2022.⁴
- Member and leader, various expert committees in [Danmarks Akkrediteringsinstitution](#), [Universitetskanslerämbetet](#) and [FINEEC](#) 2016 - .
- Member, Board of Directors, [CESAER](#) 2014 – 2016.
- Member of the review panel assessing project proposals within the field of *Communications Engineering* for *The Academy of Finland*, 2012.
- Norwegian Representative in the [European Research Consortium of Informatics and Mathematics](#) (ERCIM) AISBL Member's Assembly 2011 - 2018.
- Member of one of 25 international expert panels evaluating the research at *Uppsala University* (panel for *Dept. of Engineering Sciences*), Sweden, Spring 2011 (the so-called "Quality & Renewal" process).
- Appointed international expert evaluating candidates for promotion to professorships at Chalmers University of Technology, Gothenburg, Sweden, 2010 and 2012.
- Member, [Scientific Council](#) (now Scientific Advisory Board), [EURECOM](#) 2009 – 2019.
- Member of the Board of Directors, [European Research Consortium of Informatics and Mathematics](#) (ERCIM), 2009 – 2011.

² Until 01.01.2004: The Department of Telecommunications. 01.01.04 - 31.12.2016: The Department of Electronics and Telecommunications.

³ Now University of Stavanger.

⁴ Research in CEEDA was led and undertaken by [Dr. Ruth Graham](#).

- Appointed international expert in a committee evaluating candidates for an associate professorship at Chalmers University of Technology, Gothenburg, Sweden, 2009.
- International expert advisor for the scientific board of the *Swedish Science Foundation's* (SSF) Centre of Excellence *WISNET – Wireless Sensor Networks*, 2008 - 2011.
- Participant in, and project manager of the Norwegian part of, the research project *CROPS2* (Cross-Layer Optimization in Wireless Sensor Networks for Spectrum Sensing), funded by the pan-Nordic ICT research programme NORDITE, 2008 – 2012 (collaboration between KTH (Sweden), NTNU (Norway), and TKK (Finland)).
- Participant in the research project (STREP) proposal *SENDORA (SEnsor Network aideD cOgnitive RADio)*, funded under the EU FP7 Call 1, Objective 1 *Network of the future*, 2008 - 2011.
- Member of the Management Committee and national delegate in COST Action 2100 *Pervasive Mobile & Ambient Wireless Communications*, 2006 - 2010.
- Project manager of the Norwegian part of the French-Norwegian collaboration project *CORAL* (Cooperative and Opportunistic Resource ALlocation in wireless networks), funded by the French-Norwegian collaboration programme *Aurora*, 2007 - 2008. French partner: Institut Eurécom, Sophia-Antipolis, France.
- Invited guest co-editor (with Profs. Arne Svensson, Seiichi Sampei, and Mohamed-Slim Alouini) of a special issue of *Proceedings of the IEEE* on adaptive transmission and communication technologies, Spring 2006 (issue published in October 2007).
- Participant in, and project manager of the Norwegian part of, the research project *CROPS* (Cross-Layer Optimization in Short-Range Wireless Sensor Networks), funded by the pan-Nordic ICT research programme NORDITE 2006 - 2008 (collaboration between KTH (Sweden), NTNU (Norway), and TKK (Finland)).
- Editor of the chapter “Adaptive Systems and Link Adaptation” in the Final Report for COST Action 273 *Towards Mobile Broadband Multimedia Networks* (published May 2006).
- Participant and NTNU contact person in the pan-European *NEWCOM Network of Excellence on Wireless COMMunications* (NoE), funded by the EU's 6th framework program from March 1st, 2004 - 2007.
- Member of the Management Committee and national delegate in COST Action 289 *Spectrum and Power Efficient Broadband Communications* 2003 - 2007.

Nationally (in Norway):

- Board Member, [Adolf Øiens Fond, Stiftelsen for næringsutvikling](#) 2020 – 2025.
- Chairman, [The Portfolio Board for Enabling Technologies](#), Norwegian Research Council 2019 – 2023.
- [Advisory Board Member](#), [SINTEF Digital](#), 2018 – .
- Board Member, [SINTEF Energi](#), 2017 – 2019.
- Chairman of the *National Faculty Meeting for Natural Sciences*, a coordinating body under The Norwegian Association of Higher Education Institutions (UHR), 2015 – 2017 (also vice-chairman 2012 - 2015).
- Member and leader, various expert committees in [NOKUT](#) - *The Norwegian Agency for Quality Assurance in Education*, 2012 – 2021.
- Appointed member of the Norwegian government's external reference group for development of the new [National Strategy for ICT R&D 2013 - 2022](#), 2012 – 2013.

- Board Member of *The Norwegian SmartGrid Centre*, 2011 – 2019.
- Member of the programme board of the thematic programme *VERDIKT (Value Creation and Core Competence in ICT)* in the Research Council of Norway, January 2011 – December 2014.
- Member of the *National Council for Technology Education (NRT)* and the *National Faculty Meeting for Natural Science (NFmR)* 2009 - 2017.
- Member of the *SINTEF Advisory Board* 2009 - 2016.
- Board Member for the companies *Wireless Trondheim ASA* (2009 – 2010) and *SkyID ASA* (2010 - 2011).
- Participant, proposal co-author, and PhD supervisor in the project *Spectrally Efficient COMMunications for future Aeronautical Services*, funded by NFR (VERDIKT programme) 2007 - 2011.
- Member of the Norwegian Research Council's (NFR's) *National Committee for Technology Sciences* (Fagkomiteen for teknologifag, Divisjon for vitenskap; *FRITEK*), 2007 – 2010.
- Participant and PhD supervisor in the project/strategic university programme *SAMPOS/WISENET (Strategies for seAMless dePloyment Of wireless biomedical Sensor networks)*, funded by the NFR (VERDIKT programme) 2006 - 2009.
- Participant and PhD supervisor in the research project *CUBAN (Co-optimized Ubiquitous Broadband Access Networks)*, funded partly by the "Basic ICT Research 2000- 2010" (IKT-2010) research programme financed by the NFR, and partly by NTNU, 2004 - 2008.
- Manager of the research project *BEATS (Bandwidth-Efficient and Adaptive Transmission Schemes for wireless multimedia communications)*, financed by the NFR programme IKT-2010 2000 – 2005 (two successive grants, pts. 1 + 2).
- Manager of and PhD supervisor in the joint NTNU-Telenor research project *TURBAN (TURbo codes, Access and Network technology related to UMTS)* 1999 - 2005.

Supervision of PhD students:

- 21 PhD students graduated since 2002 (of which 13 as main supervisor, 8 as co-supervisor).

Teaching experience:

- A variety of courses taught both at the bachelor, master, and PhD level in the period 1994 – 2009 (University of Stavanger + NTNU), within signal processing, information theory, communication theory, wireless communications, pattern recognition, image processing, transmission media.

Professional memberships:

- Elected Member in [Norwegian Academy of Technological Sciences](#) (NTVA) since 2010.
- Elected member in [The Royal Norwegian Society of Sciences and Letters \(DKNVS\)](#), Natural Sciences Division, Subject Group VIII Technology since 2015.
- Senior Member, IEEE (membership currently not active)

Courses taken in management and administration

- 1-day course on "Crisis handling at NTNU" (Lokale beredskapsroller ved NTNU), arranged by NTNU, Trondheim, Nov. 30, 2012.

- Topplederprogrammet EU/EØS 2010, Public Top Manager Development Program (2+3 days) arranged by *KjennEuropa*, Spring 2010.
- “The Dean School” (*Dekanskolen*), University Manager Development Program (3x3 days) arranged by The Norwegian Association of Higher Education Institutions (UHR), Spring 2010.
- Scientific Management, Development Program (3x2 days) arranged by NTNU, Fall 2008.
- 2-day course on “Recruitment of scientific personnel”, arranged by NTNU, Trondheim, May 14 – 15, 2008.

Reference persons

Available upon request.

Publications

More than 150 papers in refereed international journals and conference proceedings since 1991. [Full publication list available here](#) (from national database Cristin). Hirsch’s h-index 18 ([Web of Science](#))/22 ([Scopus](#)).

Papers and correspondence in refereed international journals, last 10 years:

1. N. H. Mahmood, F. Yilmaz, M.-S. Alouini, **G. E. Øien**, “[Heterogeneous next-generation wireless network interference model and its applications](#)”, *Transactions on Emerging Telecommunications Technologies*, vol. 25 (5), 2014.
2. N. H. Mahmood, F. Yilmaz, **G. E. Øien**, and M.-S. Alouini, “[On Hybrid Cooperation in Underlay Cognitive Radio Networks](#)”, *IEEE Transactions on Wireless Communications*, vol. 12 (9), 2013.
3. L. Vijayandran, S.-S. Byun, **G. E. Øien**, and T. Ekman, “Increasing Sum Rate in Large-Scale Cognitive Radio Networks by Centralized Power and Spectrum Allocation,” *EURASIP Journal of Wireless Communications and Networking*, 2012:362, Dec. 2012, doi: 10.1186/1687-1499-2012-362.
4. M. Kaynia and **G. E. Øien**, “Optimizing the Performance of Non-Fading and Fading Networks Using CSMA with Joint Transmitter and Receiver Sensing,” *EURASIP Journal of Wireless Communications and Networking*, 2012: 271, Aug. 2012, doi:10.1186/1687-1499-2012-271.

Refereed international conference papers, last 10 years:

1. **G. E. D. Øien** and J. Bennedsen, “Developing a Pedagogical Foundation for the TECH Faculty at Aarhus University”, submitted to *The 19th International CDIO Conference*, Trondheim, Norway, June 2023.
2. J. Bennedsen, **G. E. D. Øien** et al., «Lifelong Learning at Engineering Institutions: Barriers and Enablers», submitted to *The 19th International CDIO Conference*, Trondheim, Norway, June 2023.
3. **G. E. D. Øien**, I. Pettersen and N. R. Bodsberg, “How Does the Extent of Student-Active Learning in Engineering Programmes Influence Students’ Perceived Learning Outcomes?”, in *Proc. The 50th SEFI Conference*, Barcelona, Spain, Sept. 2022.
4. **G. E. D. Øien** and N. R. Bodsberg, “A Roadmap for Engineering and Technology Education Reform at the Norwegian University of Science and Technology (NTNU)”, in *Proc. The 50th SEFI Conference*, Barcelona, Spain, Sept. 2022.
5. **G. E. D. Øien**, N. R. Bodsberg, and R. Lyng, “Redesigning Norwegian Engineering Education Pt. 1: Benchmarking and Principles for Development,” presented at *The 18th International CDIO Conference*, Reykjavik, Iceland, June 2022.
6. N. R. Bodsberg, **G. E. D. Øien**, and R. Lyng, “Redesigning Norwegian Engineering Education Pt. 2: SWOT

Analysis Enabling Fact-Based Decisions,” presented at *The 18th International CDIO Conference*, Reykjavik, Iceland, June 2022.

7. R. Lyng, N. R. Bodsberg, and **G. E. D. Øien**, “Redesigning Norwegian Engineering Education Pt. 3: Stakeholder Interaction,” presented at *The 18th International CDIO Conference*, Reykjavik, Iceland, June 2022.
8. N. H. Mahmood, F. Yilmaz, **G. E. Øien**, and M.-S. Alouini, “On hybrid cooperation in underlay cognitive radio networks,” in *Proc. Asilomar Conference on Signals, Systems, and Computers*, Pacific Grove, USA, Nov. 2012.
9. N. H. Mahmood, F. Yilmaz, M.-S. Alouini, and **G. E. Øien**, “Cognitive interference modeling with applications in power and admission control,” in *Proc. DySPAN-2012*, Bellevue, Washington, USA, Oct. 2012.
10. N. H. Mahmood, **G. E. Øien**, L. Lundheim and U. Salim, “A relative rate utility based distributed power allocation algorithm for cognitive radio networks,” in *Proc. IEEE PIMRC-2012*, Sydney, Australia, Sept. 2012.
11. J. Rasool and **G. E. Øien**, “Joint power and bandwidth allocation for discrete-rate multi-user link adaptation with imperfect channel state information,” in *Proc. IEEE PIMRC-2012*, Sydney, Australia, Sept. 2012.
12. M. A. Sakraoui, A. Hayar, M. Sadik, **G. E. Øien** and C. Wang, “Unified framework for congestion and fading analysis and backoff exponent computation in cognitive green networks,” in *Proc. IEEE ISWCS-2012*, Paris, France, Aug. 2012.
13. J. Rasool and **G. E. Øien**, “Maximizing the throughput guarantees in wireless networks under imperfect channel knowledge,” in *Proc. IEEE WCNC-2012*, Paris, France, April 2012.

Books and reports (selected)

1. **G. E. D. Øien** and N. R. Bodsberg, [Teknologiutdanning 4.0: Anbefalinger for utvikling av NTNUs teknologistudier 2022 - 2030](#) (*Technology Education 4.0: Recommendations for Development of NTNU's Technology Studies 2022 – 2030*). Final report, *Technology Education of the Future* project at NTNU, January 2022 (in Norwegian).
2. A. Rolstadås, A. Krokan, **G. E. D. Øien** et al. (ed.), [Den digitale hverdagen](#) (*Digital Everyday Life*), book published by Norwegian Academy of Technical Sciences/John Grieg Forlag, October 2021. ISBN-13: 978-8253304007. In Norwegian.
3. **G. E. D. Øien** and N. R. Bodsberg, [Delrapport 3, Fremtidens teknologistudier: Vision og anbefalte prinsipper](#) (*Partial Report 3, Technology Education of the Future: Vision and Recommended Principles*). Report, NTNU, February 2021 (in Norwegian).
4. N. R. Bodsberg and **G. E. D. Øien**, [Delrapport 2, Fremtidens teknologistudier: Ståstedsanalyse](#) (*Partial Report 2, Technology Education of the Future: Analysis of the Present Status*). Report, NTNU, February 2021 (in Norwegian).
5. **G. E. D. Øien** and N. R. Bodsberg m. fl., [Delrapport 1, Fremtidens teknologistudier: Bærekraftig kompetanse](#) (*Partial Report 1, Technology Education of the Future: Sustainable Competence*). Report, NTNU, June 2020 (in Norwegian).

Popular articles (selected)

1. N. R. Bodsberg, G. Owren and **G. E. D. Øien**, “Fremtidens teknologistudier ved NTNU: Implementeringsmodell og eksempelprogram” (*Technology Education of the Future at NTNU: Implementation Model and Example Programme*), submitted to *MNT-konferansen 2023*, Stavanger. Norway, March 2023. In Norwegian.
2. I. Martinkenaite and **G. E. D. Øien**, “Etiske problemstillinger ved kunstig intelligens: Respekt for menneskelig autonomi” (*Ethical Dilemmas Related to Artificial Intelligence: Respect for Human*

Autonomy). Chapter 23 in [*Den digitale hverdagen* \(Digital Everyday Life\)](#), book published by Norwegian Academy of Technical Sciences/John Grieg Forlag, October 2021. ISBN-13: 978-8253304007. In Norwegian.

3. **G. E. D. Øien**, "NTNU: Digital technology takes higher education to new levels by 2030," [Telenor Digital Outlook 2030: Learn](#), August 2021.

Recent invited talks and other dissemination activities (selected)

1. **G. E. D. Øien**, J. Bennedsen, M. Bevum, P. Göranson, and S. M. Løvsø, *Lifelong learning for engineers in the Nordic-Baltic region: How to facilitate transnational collaboration?* Facilitated Roundtable Discussion, accepted session at *The 3rd International Lifelong Learning ICDE Conference*, Lillehammer, Norway, February 2023.
2. **G. E. D. Øien**, *Engineering Education Reform at NTNU: From Principles to Implementation – Roadmap and Challenges*. Keynote talk, *The 18th International CDIO Conference*, Reykjavik, Iceland, 14 June 2022.
3. **G. E. D. Øien**, [Integrating sustainability competence into tomorrow's tech education programmes \(pdf\)](#). Opening talk, *NTNU Webinar on Sustainability in Education*, 3 March 2021.
4. **G. E. D. Øien**, [Technology Education of the Future \(FTS\)](#) (video). Keynote talk, The [CDIO Europe-UK & Ireland Regional Meeting 2021](#), 7 January 2021.