Dinesh Krishnamoorthy Kallur

dineshk@ieee.org
d.krishnamoorthy@tue.nl
phone : +47 481 578 41

website :https://dinesh-krishnamoorthy.github.io/
Github : https://github.com/dinesh-krishnamoorthy

Academic Appointments

2022 - current **Eindhoven University of Technology** (TU/e).
Assistant Professor (with tenure)
Department of Mechanical Engineering & Eindhoven Artificial Intelligence Systems Institute (EAISI)

2021 - 2022 **Harvard University**.
Post-doctoral Researcher
Doyle Lab, Harvard John A. Paulson School of Engineering and Applied Sciences

2019 - 2021 **Norwegian University of Science and Technology** (NTNU).
Post-doctoral Researcher

Education

2016 - 2019 **Norwegian University of Science and Technology** (NTNU).
PhD in Process Systems Engineering (Date of defense : 07.11.2019)
Doctoral Advisor : Prof. Sigurd Skogestad
▷ *Thesis title : Novel Approaches to Online Process Optimization under Uncertainty*

2011 - 2012 **Imperial College London**.
MSc Control Systems (Distinction)

2008 - 2011 **University of Nottingham**.
B.Engg (Hons.) Mechatronics Engineering - First class *(Top rank)*

Awards and Honours

2024 **Equinor High Impact Invention Reward**
Honored for high impact Inventions in recognition of patents GB2543048A and WO2015070913A1

2024 **Outstanding Student Paper Prize**
IEEE Control System Society TC on Energy Systems
▷ *For my PhD student Christopher A. Orrico.*

2023 **EuroTech Future Award**
EuroTech Universities Alliance
▷ *Recognizing excellent early-career contributions to a more sustainable world.*

2022 **Outstanding Reviewer**
IEEE Control Systems Letters Journal

2020 **Chorafas Outstanding PhD Thesis Award**
Dimitris N. Chorafas Foundation
▷ *Awarded for an outstanding PhD thesis across all scientific disciplines (one of 35 winners worldwide)*

2020 **PhD Excellence Award on Computer-Aided Process Engineering (CAPE)**
European Federation of Chemical Engineers (EFCE)
▷ *Awarded for the best PhD thesis in the field of process systems engineering between 2017-2019*

2020 **Best PhD Thesis Award**
Faculty of Natural Sciences, Norwegian University of Science and Technology (NTNU)

2020 **Post-doc Travel Award**
Processes

2019 **National Science Foundation (NSF) Young Researcher Travel Award**
Foundations on Process Analytics and Machine learning (FOPAM)

2018 **IFAC-ABB Best Student Paper Award**
IFAC Workshop on Automatic Control in Offshore Oil and Gas production

2018	**IFAC Young Author Award Finalist** (top 3) & **Keynote speaker** *IFAC Symposium on Advanced Control of Chemical Processes (ADCHEM)*
2011	**Graduating Student Award for Outstanding Academic Excellence** *University of Nottingham, Malaysia Campus*
2008, 2009, & 2010	**High Achiever's Scholarship** (Three consecutive years) *University of Nottingham, Malaysia Campus*

Secondary Academic Appointments

2022 - current	Research Associate *Dutch Institute for Fundamental Energy Research (DIFFER), Eindhoven, Netherlands* ▷ *Energy and Systems Control Group*
2022 - 2023	Research Associate *Harvard University, Cambridge, MA, USA* ▷ *Doyle Lab, Harvard John A. Paulson School of Engineering and Applied Sciences*
2020	Visiting Research Scholar *Denmark Technical University (DTU), Kongens Lyngby, Denmark* ▷ *Department of Applied Mathematics and Computer Science, DTU*
2019	Visiting PhD Student *Carnegie Mellon University, Pittsburgh, PA, USA* ▷ *Biegler Lab, Department of Chemical Engineering*

Industrial Research Experience

2020 - 2021	**Novo Nordisk, Device R&D**, Denmark. Senior Data Scientist - Digital Health Technologies (part-time 20%)
2018 - 2019	**Equinor Research Center**, Norway. Senior Researcher (part-time 20%)
2012 - 2016	**Equinor Research Center**, Norway. Senior Researcher, Production Optimization

Research grants

2024 - 2027	(PI) NWO Veni Early Career Talent Scheme - Dutch Research Council (€280000) *To each their own : Breaking the barriers in heterogeneous multi-agent decision-making* ▷ *Personal grant (Success rate = 11%)*
2023 - 2026	(PI) EUROfusion Engineering Grant - European Commission (€289000) *Efficient controller development for fusion tokamaks.* ▷ *Personal grant*
2023 - 2024	(co-PI) Open round COVID-19 contamination and spread - ZonMW (€285000) *Model Predictive Pandemic Control* ▷ *Collaborators : Mauro Salazar (TU/e), Jacco Wallinga (RIVM), Paul de Klaver(MMC)*
2020 - 2021	(co-PI) Peder Sather Grant - Peder Sather Center for Advanced Study at UC Berkeley (US$24000) *Deep Learning-based Embedded Control Systems for Biomedical Applications.* ▷ *Collaborators : Ali Mesbah (UC Berkeley), Sigurd Skogestad (NTNU)*
2019 - 2022	(co-PI) IKTPLUSS Research Grant - Research Council of Norway (Total $\sim$ €1.2 million ; To D.K. $\sim$€500000) *Intelligent use of data to build optimization tools for cyber-physical systems* ▷ *Collaborators : Sigurd Skogestad (NTNU)*

Research Interests

— Control and optimization of large-scale *cyber-physical system-of-systems*

— Learning-based control formulations

— Engineering applications to intelligent infrastructure systems

Google scholar h-index = 17, i10-index = 29 (as of August 2024)

Journal papers

J1 **Krishnamoorthy, D.** An Improved Data Augmentation Scheme for Model Predictive Control Policy Approximation, *IEEE Control System Letters*, Vol. 7, p. 1867-1872.

J2 Orrico, C. A., van Berkel, M., Bosman, T., Heemels, W.P.M.H., **Krishnamoorthy, D.**, 2023. Mixed-Integer MPC Strategies for Fueling and Density Control in Fusion Tokamaks, *IEEE Control System Letters* , Vol. 7, p. 1897 - 1902.

J3 Bosman, T., Koechl, F., Ho, A., de Baar, M., **Krishnamoorthy, D.**, van Berkel, M., 2023. Integrated model control simulations of the electron density profile and the implications of using multiple discrete pellet injectors for control, *Nuclear Fusion*, Vol. 63, p. 126047.

J4 Mdoe, Z., **Krishnamoorthy, D.**, Jäschke, J. 2023. Stability Properties of the Adaptive Horizon Multi-Stage MPC. *Journal of Process Control* , Vol. 128, p. 103002.

J5 **Krishnamoorthy, D.**, 2022. A Sensitivity-based Data Augmentation for Learning an Approximate Model Predictive Controller, *IEEE Transactions on Automatic Control*, Vol. 67(11), p.6090 - 6097.

J6 **Krishnamoorthy, D.** and Doyle III, F. J., 2022. Safe and Personalized Meal Bolus Calculator for Type-1 Diabetes using Bayesian Optimization. *IEEE Transactions on Biomedical Engineering*, Vol. 70 (5), p. 1481 - 1492.

J7 Dirza, R., Matias, J., Skogestad, S., and **Krishnamoorthy, D**. 2022. Experimental validation of distributed feedback-based RTO, *Control Engineering Practice*, Vol. 126, p. 105253.

J8 **Krishnamoorthy, D.** and Doyle III, F. J., 2022. Safe Bayesian Optimization using Interior-Point Methods - Applied to Personalized Insulin Dose Guidance. *IEEE Control System Letters*, Vol. 6, p. 2834 - 2839.

J9 **Krishnamoorthy, D.** and Doyle III, F. J., 2022. Model-free Real-time Optimization of Process Systems using Safe Bayesian Optimization. *AIChE Journal* , Vol. 69(4), p. e17993.

J10 **Krishnamoorthy, D.** and Skogestad, S., 2022. Real-Time Optimization as a Feedback Control Problem - A Review. *Comput. & Chem. Eng*. Vol. 161, pp. 107723. *Invited paper in connection to the Excellence in CAPE PhD thesis award*

J11 **Krishnamoorthy, D.**, Boiroux, D., Aradottir,T.B., Engell,S.E., and Jørgensen,J.B., 2021. A Model-free Approach to Automatic Dose Guidance in Long Acting Insulin Treatment of Type 2 Diabetes. *IEEE Control System Letters*, Vol.5(6), p.2030 - 2035.

J12 **Krishnamoorthy, D.**, 2021. A Distributed Feedback-based Online Process Optimization Framework for Optimal Resource Sharing. *J. Proc. Control*. Vol. 97, p. 72-83.

J13 **Krishnamoorthy, D.**, Biegler, L. and Jäschke, J., 2020. Adaptive Horizon Economic Nonlinear Model Predictive Control. *J. Proc. Control*. Vol. 92, p. 108-118.

J14 **Krishnamoorthy, D.**, Skogestad, S., 2020 Systematic design of active constraint switching using selectors. *Comput. & Chem. Eng.*. Vol. 143, p. 107106.

J15 **Krishnamoorthy, D.**, Foss, B. and Skogestad, S., 2019. A Primal decomposition algorithm for distributed multistage scenario model predictive control. *J. Proc. Control*. Vol 81, p.162-171 - *ADCHEM special issue invited paper*.

J16 **Krishnamoorthy, D.**, Fjalestad, K. and Skogestad, S., 2019. Optimal operation of offshore oil and gas production using simple control structures, *Control Engineering Practice*, Vol 91, p. 104107.

J17 **Krishnamoorthy, D.**, Foss, B. Suwartadi, E., Jäschke, J. and Skogestad, S., 2018. Improving Scenario Decomposition for Multistage MPC using a Sensitivity-based Path-following Algorithm, *IEEE Control System Letters*, Vol 2(4), p.581-586

J18 **Krishnamoorthy, D.**, and Skogestad, S., 2019. Online process optimization with changes in active constraint sets using simple feedback control structures, *Ind. Eng. Chem. Res*. Vol. 58 (30), p. 13555-13567

J19 Jahanshahi, E., **Krishnamoorthy, D.**, Codas, A., Foss, B. and Skogestad, S., 2019. Plantwide control of an oil production network, *Comput. & Chem. Eng.*, Vol. 136, p. 106765.

J20 **Krishnamoorthy, D.**, Jahanshahi, E. and Skogestad, S., 2019. A feedback RTO strategy using Transient Measurements , *Ind. Eng. Chem. Res*. Vol 58 (1), p. 207-216.

J21 Straus, J.[†], **Krishnamoorthy, D.**[†] and Skogestad, S., 2019. Combining self-optimizing control and extremum seeking control - Applied to ammonia reactor case study, *J. Proc. Control*. Vol 78, p. 78-87. ([†]*equal contribution*)

J22 **Krishnamoorthy, D.**, Foss, B. and Skogestad, S., 2018. Steady-State Real-time Optimization using Transient Measurements. *Comput. & Chem. Eng.*, Vol 115, p. 34-45.

J23 **Krishnamoorthy, D.**, Foss, B. and Skogestad, S., 2016. Real-Time Optimization under Uncertainty Applied to a Gas Lifted Well Network. *Processes*, Vol 4(4), p. 52.

Peer-reviewed conference papers

C1 **Krishnamoorthy, D.**, 2024. ECCBO : An Inherently Safe Bayesian Optimization with Embedded Constraint Control for Real-Time Optimization. *IFAC ADCHEM*, Toronto, Canada. *Keynote talk*

C2 Van der Horst, A., Meere, B., **Krishnamoorthy, D.**, Bakker, S., van de Vrande, B., Stoutjesdijk, H., Alonso, M., Torta, E., 2024. A Bayesian optimization framework for the automatic tuning of MPC-based shared controllers. *Proceedings of the 2024 IEEE International Conference on Robotics and Automation (ICRA)*, Yokohama, Japan.

C3 **Krishnamoorthy, D.** An Improved Data Augmentation Scheme for Model Predictive Control Policy Approximation, *Proceedings of the 2023 IEEE Conference on Decision and Control*, Singapore.

C4 Orrico, C. A., van Berkel, M., Bosman, T., Heemels, W.P.M.H., **Krishnamoorthy, D.**, 2023. Mixed-Integer MPC Strategies for Fueling and Density Control in Fusion Tokamaks, *Proceedings of the 2023 IEEE Conference on Decision and Control*, Singapore.

C5 Palacio, P.C., Maestre, J.M., **Krishnamoorthy, D.**, and Camacho, E.F. ALADIN-based Distributed Model Predictive Control with dynamic partitioning : An application to Solar Parabolic Trough Plants, *Proceedings of the 2023 IEEE Conference on Decision and Control*, Singapore.

C6 **Krishnamoorthy, D.**, 2023. On Tuning Parameterized Control Policies Online for Safety-Critical Systems – Applied to Biomedical Systems, *IFAC World Congress*, Yokohama, Japan.

C7 **Krishnamoorthy, D.** and Paulson, J., 2023. Multi-agent Black-box Optimization using a Bayesian Approach to Alternating Direction Method of Multipliers, *IFAC World Congress,* Yokohama, Japan.

C8 **Krishnamoorthy, D.**, 2023. Optimizing Surplus Heat Recovery using Fast Fourier Transform-based Extremum Seeking Control, *IFAC World Congress*, Yokohama, Japan.

C9 Aas, V., Dirza, R., **Krishnamoorthy, D.**, Skogestad, S., 2023. A comparative study of distributed feedback-optimizing control strategies, Computer-aided Chemical Engineering, Vol. 52, p.613-618.

C10 **Krishnamoorthy, D.** and Kungurtsev, V., 2022. A Sensitivity-assisted Alternating Directions Method of Multipliers for Distributed Optimization, *Proceedings of the 2022 IEEE Conference on Decision and Control*, Cancun, Mexico.

C11 **Krishnamoorthy, D.** and Doyle III, F. J., 2022. Safe Bayesian Optimization using Interior-Point Methods - Applied to Personalized Insulin Dose Guidance. *Proceedings of the 2022 IEEE Conference on Decision and Control*, Cancun, Mexico.

C12 **Krishnamoorthy, D.** and Doyle III, F. J., 2022. Personalized Dose Guidance using Safe Bayesian Optimization. *2022 Machine Learning for Health (ML4H)*, New Orleans, USA.

C13 Dirza, R., Rizwan, M., Skogestad, S. and **Krishnamoorthy, D.**, 2022. Real-Time Optimal Resource Allocation Using Online Primal Decomposition, IFAC-PapersOnLine Vol. 55 (21), p.31-36.

C14 Bernardino, L.F., **Krishnamoorthy, D.** and Skogestad, S., 2022. Optimal Operation of Heat Exchanger Networks with Changing Active Constraint Regions, Computer Aided Chemical Engineering Vol. 49, p.421-426.

C15 Dirza, R., **Krishnamoorthy, D.** and Skogestad, S., 2022. Primal-dual Feedback-optimizing Control with Direct Constraint Control, Computer Aided Chemical Engineering Vol. 49, 1153-1158.

C16 Bernardino, L.F., **Krishnamoorthy, D.** and Skogestad, S., 2022. Comparison of Simple Feedback Control Structures for Constrained Optimal Operation. IFAC-PapersOnLine Vol. 55 (7), p.883-888

C17 **Krishnamoorthy, D.**, Dimitri Boiroux, Tinna Björk Aradottir, Sarah Ellinor Engell and John Bagterp Jørgensen, 2021. A Model-free Approach to Automatic Dose Guidance in Long Acting Insulin Treatment of Type 2 Diabetes. *Proceedings of the 2021 American Control Conference*, New Orleans, USA.

C18 **Krishnamoorthy, D.**, Mesbah, A., Paulson, J., 2021. An Adaptive Correction Scheme for Offset-Free Asymptotic Performance in Deep Learning-based Economic MPC, *IFAC-PapersOnLine* Vol. 54 (3), p. 584-589 (IFAC ADCHEM 2021).

C19 Dirza, R., Skogestad,S., **Krishnamoorthy, D.**, 2021. Optimal Resource Allocation using Distributed Feedback Real-time Optimization. *IFAC-PapersOnLine*, Vol. 54 (3), p.706-711 (IFAC ADCHEM 2021) *Keynote talk*

C20 Mdoe, Z., **Krishnamoorthy, D.**, and Jäschke,J., 2021. Adaptive Horizon Multistage Nonlinear Model Predictive Control. *Proceedings of the 2021 American Control Conference*, p. 2088-2093.

C21 Prakash, S., **Krishnamoorthy, D.**, and Jäschke,J., Multi-scenario Design Optimization using ADMM of a Thermal Energy Storage system. *Computer aided chemical engineering* (ESCAPE 31), Vol. 50, p. 739-745.

C22 **Krishnamoorthy, D**.,Valli, C. and Skogestad, S., 2020. Real-time OAptimal Resource Allocation in an Industrial Symbiotic Network using Transient Measurements. *Proceedings of the 2020 American Control Conference*, p. 3541-3546, Denver, USA.

C23 **Krishnamoorthy, D.** and Skogestad, S., 2020. Linear Combination of Gradients as Optimal Controlled Variables, *Computer aided chemical engineering*, Vol. 48, p. 1237-1242 (ESCAPE 30).

C24 **Krishnamoorthy, D.**, Jäschke, J. and Skogestad, S., 2019. Multistage Model Predictive Control with Online Scenario Tree Update using Recursive Bayesian Weighting, *Proceedings of the 2019 European Control Conference*, p.1443 - 1448, Naples, Italy.

C25 **Krishnamoorthy, D.**, Ryu, J. and Skogestad, S., 2019. Dynamic extremum seeking control applied to a gas lifted well network, *IFAC-PapersOnLine*, 52(1), 802-807 (IFAC DYCOPS 2019)

C26 Thombre, M., **Krishnamoorthy, D.**, and Jäschke, J., 2019. Data-driven Multistage Model Predictive Control of a Thermal Storage System with Time-Varying Uncertainty, *IFAC-PapersOnLine*, 52(1), 461-467 (IFAC DYCOPS 2019)

C27 Delou, P., Azevedo, J., **Krishnamoorthy, D.**, de Souza Jr, M. and Secchi, A., 2019. Model Predictive Control with Reconfiguration Strategy applied to an Electric Submersible Pump in a subsea environment, *IFAC-PapersOnLine*, 52(1), 784-789 (IFAC DYCOPS-CAB, Florianopolis, Brazil)

C28 **Krishnamoorthy, D.**, Jahanshahi, E. and Skogestad, S., 2019. A feedback Real time optimization strategy applied to an evaporator process, PSE Asia, Bangkok, Thailand.

C29 **Krishnamoorthy, D.**, Foss, B. Suwartadi, E., Jäschke, J. and Skogestad, S., 2018. Improving Scenario Decomposition for Multistage MPC using a Sensitivity-based Path-following Algorithm, *Proceedings of the 2018 IEEE Conference on Decision and Control*, Miami beach, USA.

C30 **Krishnamoorthy, D.**, Foss, B. and Skogestad, S., 2018. A distributed algorithm for scenario-based model predictive control using primal decomposition *IFAC-PapersOnLine* Vol. 51 (18), pp. 351-356 (IFAC ADCHEM, Shenyang, China) - *Keynote talk, and IFAC Young Author Award finalist*

C31 **Krishnamoorthy, D.**, Thombre, M., Jäschke, J. and Skogestad, S., 2018. Data-driven scenario selection for multistage robust model predictive control, *IFAC-PapersOnLine*, 51(20), pp.462-468 (IFAC NMPC, Madison, Wisconsin).

C32 **Krishnamoorthy, D.**, Jahanshahi, E. and Skogestad, S., 2018. Gas-lift Optimization by Controlling Marginal Gas-Oil Ratio using Transient Measurements, *IFAC-PapersOnLine*, 51(8), pp.19-24 (IFAC OOGP, Esbjerg, Denmark) - *IFAC-ABB Best Student Paper Award*.

C33 Suwartadi, E.,**Krishnamoorthy, D.**and Jäschke, J., 2018. Fast Economic Model Predictive Control for a Gas Lifted Well Network, *IFAC-PapersOnLine*, 51(8), pp.25-30 (IFAC OOGP, Esbjerg, Denmark).

C34 Backi, C. J.,**Krishnamoorthy, D.**and Skogestad, S., 2018. Slug handling with a virtual harp - based on nonlinear predictive control for a gravity separator, *IFAC-PapersOnLine*, 51(8), pp.120-125 (IFAC OOGP, Esbjerg, Denmark).

C35 **Krishnamoorthy, D.**, Aguiar, M. A. M., Foss, B. and Skogestad, S., 2018. A Distributed Optimization Strategy for Large scale Oil and Gas Production Systems, *Proceesdings of the 2018 IEEE Conference on Control Technology and Applications* (CCTA), Copenhagen, Denmark.

C36 Backi, C. J., **Krishnamoorthy, D.**, Verheyleweghen, A. and Skogestad, S., 2018.Combined nonlinear moving horizon estimation and model predictive control applied to a compressor for active surge control, *Proceedings of the 2018 IEEE Conference on Control Technology and Applications* (CCTA), Copenhagen, Denmark.

C37 Bonnowitz, H., Straus, J., **Krishnamoorthy, D.**, and Skogestad, S., 2018. Control of the Steady-State Gradient of an Ammonia Reactor using Transient Measurements, *Computer aided chemical engineering*, Vol.43, p.1111-1116 (ESCAPE 28, Graz)

C38 Reyes-Lúa, A., Zotica, C., Das, T., **Krishnamoorthy, D.**, and Skogestad, S., 2018. Changing between Active Constraint Regions for Optimal Operation : Classical Advanced Control versus Model Predictive Control, *Computer aided chemical engineering*, Vol.43, p.1015-1020 (ESCAPE 28, Graz) - *Keynote paper presented by S.S*.

C39 **Krishnamoorthy, D.**, Foss, B. and Skogestad, S., 2017. Gaslift optimization under uncertainty. *Computer Aided Chemical Engineering*, vol.40, pg 1753-1758 (ESCAPE 27, Barcelona).

C40 **Krishnamoorthy, D.**, Pavlov, A. and Li, Q., 2016. Robust Extremum Seeking Control with application to Gas Lifted Oil Wells. *IFAC-PapersOnLine*, 49(13), pp.205-210 (IFAC ALCOSP).

C41 **Krishnamoorthy, D.**, Bergheim, E.M., Pavlov, A., Fredriksen, M. and Fjalestad, K., 2016. Modelling and Robustness Analysis of Model Predictive Control for Electrical Submersible Pump Lifted Heavy Oil Wells. *IFAC-PapersOnLine*, 49(7), pp.544-549 (IFAC DYCOPS, Trondheim, Norway).

C42 Pavlov, A., **Krishnamoorthy, D.**, Fjalestad, K., Aske, E. and Fredriksen, M., 2014, October. Modelling and model predictive control of oil wells with electric submersible pumps. *Proceedings of the 2014 IEEE Conference on Control Applications* p. 586-592.

Selected presentations and invited talks

P1 **Krishnamoorthy, D.**, Bayesian Optimization for safety critical systems - Applications to biomedical systems and chemical process systems. Seminar at DTU Compute, Denmark, 5 July 2023.

P2 **Krishnamoorthy, D.**, To each their own - Decision-making in a connected world. Seminar at Automatic Control Laboratory at EPFL, Lausanne, 24 April 2023.

P3 **Krishnamoorthy, D.**, Recent advances in fast distributed optimization. OPAC Seminar series, Department of Mathematics and Computer Science, TU Eindhoven, 30 March 2023.

P4 **Krishnamoorthy, D.**, The role of parametric sensitivities at the interface of control, learning, and optimization, Seminar at Electrical and Systems Enginering at UPenn, 29 April 2022.

P5 **Krishnamoorthy, D.**, Efficient Distributed Real time Optimization Algorithms for Large-scale Process, Process Control, Optimization, and Data Analytics Young Researcher Online Seminar Series, 27 Apr 2022. systems.

P6 **Krishnamoorthy, D.**, Efficient Distributed Real time Optimization Algorithms for Large-scale Process, Seminar at McMaster University, 04 May 2022.

P7 **Krishnamoorthy, D.**, Open Challenges in the Optimization of Industrial Symbiotic Systems, Future Innovations in Process Systems Engineering (FIPSE 5), Crete, Greece, 17 - 19 Jul 2021.

P8 **Krishnamoorthy, D.**, Distributed Real-time Optimization for large-scale plants - Towards sustainable manufacturing, Technical University of Denmark Webinar, 18 Dec 2020. (*Invited talk*)

P9 **Krishnamoorthy, D.**, On the interplay between optimization and machine learning, and the role of sensitivities, Data Analytics and Intelligent Systems Lab, University of British Columbia, 9 Nov 2020. (*Invited talk*)

P10 **Krishnamoorthy, D.** A Brief Overview of online process optimization approaches, Excellence in CAPE PhD Award Lecture, 30th European symposium on Computer Aided Process Engineering (ESCAPE), 31 Aug 2020 (*Award lecture*)

P11 **Krishnamoorthy, D.**, Achieving optimal operation without solving optimization problems, Virtual Seminar on Systems and Control at the Federal University of Rio de Janeiro, 20 Jul 2020 (*Invited talk*)

P12 **Krishnamoorthy, D.** Online process optimization approaches under uncertainty, DTU Compute and DTU Prosys, Kgs. Lyngby, Denmark (23 Jan 2020) (*Invited talk*)

P13 **Krishnamoorthy, D.**, and Skogestad, S., 2019. Real-time optimization strategies using surrogate optimizers, Foundation on Process Analytics and Machine Learning (FOPAM), Raleigh, NC - *NSF Young Researcher Travel Award*

P14 Skogestad, S. and **Krishnamoorthy, D.**, An Overview and Evaluation of Approaches for Online Process Optimization, PSE Asia,(*Invited opening plenary talk given by S. Skogestad*), 16 -19 Jan 2019.

P15 **Krishnamoorthy, D.**, Efficient production optimization strategies using transient measurements, VII Brazil-Norway Production Optimization workshop, Rio De Jenerio, May 2018. (*Invited talk*)

P16 **Krishnamoorthy, D.** Scenario-based Model Predictive Control, Guest Lecture, Federal University of Santa Catarina, Florianopolis, May 2017. (*Invited talk*)

P17 **Krishnamoorthy, D.**, Foss, B. and Skogestad, S. Real-Time Optimization under Uncertainty Applied to a Gas Lifted Well Network, VI Brazil-Norway Production Optimization workshop, Rio De Jenerio, April 2017. (*Invited talk*)

Patents

I1 **Krishnamoorthy, D.**, Ryde, T.E., Aradottir, T.B., Boiroux, D., and Bengtsson, H., System and method for personalized insulin titration, (WO2023144364A1)

I2 Aske, E., **Krishnamoorthy, D.**, Fjalestad, K., Pavlov, A. and Fredriksen, M. 2014, Well Control system (WO2015070913A1, CA2930653A1, US20160290077A1, GB2535090B)

I3 **Krishnamoorthy, D.** and Fjalestad, K. 2017, Estimating flow rate at a pump (WO2017061873A1, CA3001234A1, GB2543048A)

Media and Outreach

M1 Article on *Universitets Avisa* interviewing me in connection to my PhD Excellence Award. (in Norwegian) `https://tinyurl.com/8epwvxn7`

M2 Report on Age-dependent Epidemiological model of COVID-19 to assist policy makers in Norway - Communicated to the Director-General of the Norwegian Institute of Public Health (NIPH) on 23 March 2020 (National Lockdown announced on 12 March 2020).

M3 Contribution to the biography on Prof. Jens G. Balchen titled, *Alltid Rabiat* by Gard Paulsen (In Norwegian)

Professional training and certification

2023 University Teaching Qualification (UTQ) Certificate
▷ *TU Eindhoven*

2023 Academic Leadership Skills for Assistant Professors
▷ *TU Eindhoven*

2020 PhD Supervision Workshop
▷ *NTNU*

Teaching activities

2023 – Lecturer and course responsible, 4SC090 Control and Operation of Future Energy Systems
(Autumn) ▷ *Department Of Mechanical Engineering, TU Eindhoven* ▷ *Graduate level*

2022 – Lecturer, 4DM20 Engineering Optimization
(Autumn) ▷ *Department Of Mechanical Engineering, TU Eindhoven* ▷ *Graduate level*

2021 Lecturer and course responsible, KP3100 Chemical Engineering
(Autumn) ▷ *Department Of Chemical Engineering, NTNU* ▷ *Undergraduate level*

2020 Lecturer and course responsible, KP3100 Chemical Engineering
(Autumn) ▷ *Department Of Chemical Engineering, NTNU* ▷ *Undergraduate level*

2020 (Autumn)	Lecturer, KP8115 Advanced Process Control ▷ *Department Of Chemical Engineering, NTNU* ▷ *Graduate level*
2019 (Autumn)	Lecturer, KP8115 Advanced Process Control ▷ *Department Of Chemical Engineering, NTNU* ▷ *Graduate level*
2019 (Spring)	Lecturer and course coordinator, Numerical Optimal Control ▷ *Short Intensive graduate level course in Federal University of Rio de Janeiro (UFRJ-COPPE)* ▷ *Graduate level*
2018 (Autumn)	Teaching Assistant, KP8115 Advanced Process Control ▷ *Department Of Chemical Engineering, NTNU* ▷ *Graduate level*

Supervision of doctoral and masters students

2022 -	Supervisor for PhD Candidate Chris Oricco, TU Eindhoven. ▷ *MPC Strategies for Real Time Control of Nuclear Fusion Tokamaks*
2023 -	Supervisor for PhD Candidate Hari Prasad, TU Eindhoven. ▷ *Safe and Automated Tuning of Control Policies for Fusion Tokamaks*
2023 -	Co-Supervisor for PhD Candidate Lennard Ceelen, TU Eindhoven. ▷ *Burn Control in Nuclear Fusion Tokamaks (with Dr. M. van Berkel)*
2019 -	Co-supervisor for PhD Candidate Risvan Dirza, NTNU. ▷ *Distributed feedback optimization strategies for large-scale process systems (with Prof. S. Skogestad)*
2019 -	Co-supervisor for PhD Candidate Lucas Ferreira Bernardinho, NTNU. ▷ *Optimal operation and advanced control of process systems using decomposition and simple elements (with Prof. S. Skogestad)*
2017 -	Co-supervised 12 Master Thesis students (3 from TU Eindhoven, 3 from NTNU, 3 from Federal University of Rio de Janeiro, 1 from TU Berlin and 1 from Politecnico di Milano)
2015 - 2016	Co-supervised 2 internship trainees while I was working as senior researcher at Statoil.

Professional membership

IEEE	Senior Member *Institute of Electrical and Electronic Engineers* ▷ *IEEE Control Systems Society*
IFAC	Affiliate Member *International Federation of Automatic Control* ▷ *TC 2.4 - Optimal Control.* ▷ *TC 6.1 - Process Control.*
AIChE	Senior Member *American Institute of Chemical Engineers* ▷ *Computing and Systems Technology (CAST10)*

Editorial and academic service

2025	Associate Editor, European Control Conference (ECC), Thessaloniki, Greece
2024	Panelist, IFAC NMPC Panel discussion on ≪ Model Predictivre control in 2030 ≫, Kyoto, Japan
2024-	Expert Reviewer, German Research Foundation (DFG)
2024	Associate Editor, IFAC Conference on Nonlinear Model Predictive Control (NMPC), Kyoto, Japan
2024	Associate Editor, European Control Conference (ECC), Stockholm, Sweden
2024	Award committee, IFAC ADCHEM Young Author Award
2024	Award Committee, Outstanding Student Paper Prize for IEEE CSS TC on Process Control
2024	Associate Editor, IEEE/IFAC CoDIT, Malta

2023	Associate Editor (TC2.4), IFAC World Congress, Yokohama, Japan
2023	Associate Editor, European Control Conference (ECC), Bucharest, Romania
2022	International Program Committee, IEEE Symposium on Advanced Control of Industrial Processes (AdCONIP), Vancouver, Canada
2018	International Program Committee, 7th Brazil-Norway Production Optimization workshop, Rio De Jeneiro, Brazil
2017	Associate Editor, 1st IEEE Conference on Control Technology and Applications (IEEE CCTA), Hawaii, USA
2019 -	Reviewer of several Journal articles ▷ *IEEE Control Systems Letters* ▷ *IFAC Journal of Process Control* ▷ *IFAC Control Engineering practice* ▷ *Computers and Chemical Engineering* ▷ *IEEE Transactions on Automatic Control* ▷ *IEEE Access* ▷ *Optimization and Engineering* ▷ *AIChE Journal* ▷ *Industrial and Engineering Chemistry Research* ▷ *Brazilian Journal of Chemical Engineering* ▷ *Canadian Journal of Chemical Engineering* ▷ *Optimal Control Applications and Methods* ▷ *IFAC Engineering Applications of Artificial Intelligence*
2014 -	Reviewer of several IEEE CSS and IFAC conference papers

Referee Details

Provided upon request.