Curriculum Vitae – Kamil Dedecius

Contact Information

Kamil Dedecius (*1981)

The Czech Academy of Sciences
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Education & Degrees

2023 Associate Professor (Doc.) – Czech Technical University in Prague.

2010 PhD (Engineering Informatics) – Czech Technical University in Prague. Thesis: Partial Forgetting in Bayesian Estimation. Supervisor: Ivan Nagy.

2005 Master's degree (Ing.) – Czech Technical University in Prague. Thesis: Technical Specification for GNSS-Based System for Monitoring and Control of Mobile Objects in Airport Area. (in Czech). Supervisor: Miroslav Svitek.

Work experience

Since 2008 PhD Student / PostDoc / Research Associate, Czech Academy of Sciences, Institute of Information Theory and Automation.

Since 2018 Assistant Lecturer, Assoc. Prof. (Bayesian methods in machine learning, Statistical analysis of time series), Faculty of Information Technology, Czech Technical University in Prague.

2007 – 2010: Teaching Assistant (Statistics), Institute of Technology and Business, Department of Applied Sciences.

Scientific interests

Statistical (particularly Bayesian) modelling – main focus on the estimation theory and its sequential variants for regression models and time series.

Distributed estimation over networks of collaborating nodes (agents).

Approximate Bayesian computation (ABC) – mostly ABC filtration.

Research projects

2017 – 2018 – Rationality and Deliberation, project GA ČR 16-09848S. Member of research team. Focused on collaborative Bayesian inference.

2014 – 2016 – Distributed Dynamic Estimation in Diffusion Networks. Postdoc research project GA ČR 14-06678P. Principal investigator. Focused on development of the basic Bayesian diffusion estimation theory.

2013 – 2015 – Probabilistic Distributed Industrial System Monitor. Project MŠMT 7D12004. Member of research team. Focused on hierarchical fault detection.

Selected publications

(1) R. Žemlička and K. Dedecius, *Robust online modeling of counts in agent networks*, IEEE Trans. Inf. Signal Process. Netw., vol. 9, no. 1, pp. 217–228, 2023.

(2) K. Dedecius and R. Žemlička , *Sequential Poisson regression in diffusion networks*, IEEE Signal Processing Letters, vol. 27, pp. 625–629, 2020.

(3) K. Dedecius and O. Tichý, *Collaborative sequential state estimation under unknown heterogeneous noise covariance matrices*, IEEE Trans. Signal Process., vol. 68, pp. 5365–5378, 2020.

(4) K. Dedecius and P.M. Djurić, *Bayesian approach to collaborative inference in networks of agents (Chap. 4)*. In: Cooperative and Graph Signal Processing: Principles and Applications (P.M. Djurić and C. Richard, Eds.), Academic Press, Jun 2018.

(5) K. Dedecius and P.M. Djurić, *Sequential estimation and diffusion of information over networks: A Bayesian approach with exponential family of distributions*. IEEE Trans. Signal Process., vol. 65, no. 7, pp. 1795–1809, 2017.

(6) K. Dedecius and V. Sečkárová, *Factorized estimation of partially shared parameters in diffusion networks*. IEEE Trans. Signal Process., vol. 65, no. 19, pp. 5153–5163, 2017.

(7) K. Dedecius, J. Reichl and P.M. Djurić, *Sequential estimation of mixtures in diffusion networks*, IEEE Signal Processing Letters, vol. 22, no. 2, pp. 197–201, 2015.

(8) K. Dedecius, *Marginalized approximate filtering of state-space models*, Int. J. Adapt. Control Signal Process., vol. 32, no. 1, pp. 1–12, 2018.

(9) K. Dedecius, *Adaptive kernels in approximate filtering of state-space models*, Int. J. Adapt. Control Signal Process., vol. 31, no. 6, pp. 938–952, 2017.

(10) K. Dedecius, I. Nagy, and M. Kárný, *Parameter tracking with partial forgetting method*, Int. J. Adapt. Control Signal Process., vol. 26, no. 1, pp. 1–12, 2012.

Teaching

Bayesian methods Faculty of Applied Sciences, Ukrainian Catholic University. Since 2018.

Bayesian methods in machine learning Faculty of Information Technology, Czech Technical University in Prague. Since 2018.

Statistical analysis of time series Faculty of Information Technology, Czech Technical University in Prague. Since 2018.

Probability and Statistics Faculty of Information Technology, Czech Technical University in Prague. Since 2018.

Statistics Institute of Business and Technology in České Budějovice. 2008 – 2010.

Mathematics I (Basics of linear algebra and analysis) Institute of Business and Technology in České Budějovice. 2008 – 2010.

Statistical courses for researchers at Univ. of South Bohemia (2007, 2010).

Others

2015 Otto Wichterle Award of the Czech Academy of Sciences to its top researchers below 35 years of age.

Reviewer Several leading journals including IEEE Transactions on Signal Processing, IEEE Transactions on Parallel and Distributed Systems, and Automatica.