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List of Publications

4.5.2022

Articles in refereed scientific journals

1. Sahlström T, Tarvainen T, Utilizing variational autoencoders in the Bayesian inverse problem of photoacoustic tomography, *SIAM Journal on Imaging Sciences*, Submitted.
2. Mozumder M, Hauptmann A, Nissilä I, Arridge SR, Tarvainen T, A model-based iterative learning approach for diffuse optical tomography, *IEEE Transactions on Medical Imaging*, 41(5):1289-1299, 2022.
3. Hänninen N, Pulkkinen A, Arridge S, Tarvainen T, Adaptive stochastic Gauss-Newton method with optical Monte Carlo for quantitative photoacoustic tomography, *Journal of Biomedical Optics*, 22(8):083013, 2022.
4. Koponen E, Leskinen J, Tarvainen T, Pulkkinen A, Nonlinear estimation of pressure projection of ultrasound fields in background-oriented schlieren imaging, *Journal of the Optical Society of America A*, 39(4):552-562, 2022.
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2. Sahlström T, Pulkkinen A, Leskinen J, Tarvainen T, Computationally efficient forward model for photoacoustic tomography, in *Proc. SPIE 11923, Opto-Acoustic Methods and Applications in Biophotonics V*, C. Kim, J. Laufer, and R.J. Zemp Eds., 1192308, 2021.
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Book chapters

1. Tarvainen T, Quantitative photoacoustic tomography in Bayesian framework, In R. Ramlau and O. Scherzer Eds., *Radon Transform -The First 100 Years and Beyond*, De Gruyter, ISBN 978-3-11-055941-5 (print) 978-3-11-056085-5 (PDF) 978-3-11-055951-4 (EPUB), pages 239-271, 2019.
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Articles in professional journals

1. Tarvainen T, Ihmisen kuvantaminen valoa käyttäen, In *Arkhimedes – Journal of Physics and Mathematics,* The Finnish Physical Society, the Finnish Mathematical Society and the Physical Society in Finland, 2:14-19, 2016.

Theses (monographs)

1. Tarvainen T, Computational Methods for Light Transport in Optical Tomography, PhD thesis, University of Kuopio, Kuopio, Finland, 2006.
2. Vilhunen T, Determining Dielectric Properties of Biological Tissue (In Finnish), MSc thesis, University of Kuopio, Kuopio, Finland, 2000.

Invention disclosures

1. Time-domain diffuse optical tomography system based on nanosecond scale pulse illuminations, UEF Dnro 1330/02.08.02.01/2021, 27.8.2021.
2. MATLAB-toolbox for simulating light transport using Monte Carlo method, UEF Dnro 323.02.07.03.01.18, 26.2.2018.
3. Photoacoustic tomography system based on LED illumination, UEF Dnro 407/02.07.03.01/2018, 19.3.2018.

Software

1. ValoMC - A Monte Carlo software for simulating light transport https://inverselight.github.io/ValoMC/