Arne H. Bechensteen

PhD student in signal processing

Nice, France

Profile

I am a PhD student specializing in sparse optimization and its application in image processing. Trilingual and with a multinational background, I am a fast learner striving to develop my knowledge in applied mathematics and computer science.

Experience

PhD- MORPHEME team at INRIA/I3S/iBV
10/2017- Sophia Antipolis

PhD title: Reconstruction for 3D TIRF-MA fluorescence microscopy imaging
Sparse optimization
- Working on a the optimization of the constrained l2-lo minimization problem.
- Reconstruction of single-molecule localization microscopy images.

Internship- MORPHEME team at INRIA/I3S/iBV
03/2017-08/2017 Sophia Antipolis

Sparse optimization
- Working on a relaxation of the constrained l2-lo minimization problem.

Internship- Technical university of Denmark
06/2016-08/2016 Copenhagen

Colour image processing
- Searching a new variational model that exploits correlation between channels in multispectral images.
- Testing the proposed model with the minimization algorithms PALM and ADMM.

Internship- Norwegian Defence Research establishment
06/2015-08/2015 Oslo

3D scanning
- Scanned projectile fragments using both a normal camera and a 3D scanner.
- Wrote a program that analyzed the geometric of the fragments to find the shape factor.

Internship- Norwegian Defence Research establishment
06/2014-08/2014 Oslo

High-speed video analysing
- Developed a program that analyzed video of test firings with a newly developed ammunition, finding the speed of each fragment as well as impact coordinate

Internship- Norwegian Defence Research establishment
06/2013-08/2013 Oslo

Radar frequency analysing
- Developed a program that analyzed radar frequencies used under difficult conditions

Publications

Arne Bechensteen and Laure Blanc-Féraud and Gilles Aubert. **New l2-lo algorithm for single-molecule localization microscopy.** Biomedical Optics Express **11(2)** 2020

Arne Bechensteen and Laure Blanc-Féraud and Gilles Aubert. **Exact biconvex reformulation fo the l2-lo minimization problem** GRETSI 2019

Arne Bechensteen and Laure Blanc-Féraud and Gilles Aubert**. New Methods for l2-lo Minimization and their Applications to 2D Single-Molecule Localization Microscopy**. 2019 IEEE 16th International Symposium on Biomedical Imaging

Internal publication

Tallak H. Risdal, Arne H. Bechensteen**. High-speed video of APEX test firings: Results of data reduction to determine fragment velocities and direction.** Norwegian Defence Research establishment (FFI) report no: 14/01621. Confidential publication.

Details

01/10/1991
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France
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https://abechens.github.io/

Education

INSA Toulouse
2012-2017

Mathematical and modeling engineering

Exchange Student- Universität Hamburg
2016-2017 (1 semester)

Modelling and simulations of complex systems

Teaching

Image processing (Traitement Numérique des Images) 5th year
Polytech Nice Sophia

Applied AI 5th year
Polytech Nice Sophia

Advanced Machine Learning 5th year
Polytech Nice Sophia

Languages

Norwegian

English

French

Tools

MATLAB

Python