Curriculum Vitae for Kent-Andre Mardal

Personal information

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Born:	26.11.1974	Nationality:	Norwegian

Summary

I am a Professor of Applied Mathematics, with a PhD from 2003. I have a broad background in programming, computational modeling, image analysis and fluid mechanics. I have educated more than 40 MSc students and 15 PhD students, written more than 100 scientific papers on topics ranging from theoretical mathematics to clinical applications, and am experienced in working with and leading multidisciplinary teams.

Technical skills

Frameworks	FEniCS, Numpy, SciPy, FreeSurfer.
Languages	Python, Matlab, C++.

Education

2003	Ph.D. in Scientific Computing, Department of Informatics, University of Oslo. Thesis title 'Software tools and numerical methods for the incompressible Navier-Stokes equations'

Professional experience

2019 –	Consulant for Expert Analytics (part time)
2015 –	Professor, Division of Mechanics, Department of Mathematics, University of Oslo
2014 –	Adjunkt Scientist (part time), Scientific Computing Department, Simula Research Laboratory.
2015 – 2014	Associate Professor, Division of Mechanics, Department of Mathematics, University of Oslo
2014 – 2007	Senior Scientific Resarcher, Simula Research Laboratory
2014 – 2007	Associate Professor (part time), University of Oslo
2007 – 2003	Postdoctoral Fellow at Simula Research Laboratory

Languages

English	Fluent
Norwegian	Fluent

Personal skills

Communication	As a presenter, teacher, mentor and supervisor, I frequently present, discuss, and educate technical consepts at various levels. Most of my research is interdisciplinary, frequently with experts with domain knowledge very different from my own.
Management	I am currently managing two research projects finanzed by the Norwegian Research Council "Alzheimer's physics" and Scientific Machine Learning" of 28 MNOK, in addition to participating as workpackage leader in other projects. Hence, I am experience in managment.

Some interests and hobbies

Academic	Biomechanics, Scientific Computing, Numerics, Machine Learning
Other	Reading, traveling, football, skiing.

Extended descriptions of selected projects

Activity	Alzheimer's physics
Period	2020-2024
Role	Principle Investigator
Staffing	Funded by Norwegian Research Council (12 MNOK)
Description	This project aims at developing numerical methods, biomechanical models and software tools for simulating prevailing theories of the physics that underlies the developement of Alzheimer's disease. The project is interdisciplinary and involves clinicians as well as computational scientists, imaging experts.
Tools	Python, HPC-computing, FEniCS, Machine Learning

Activity	Scientific Machine Learning
Period	2019-2023
Role	Principle Investigator
Staffing	Funded by Norwegian Research Council (16 MNOK)
Description	This project aims at developing robust methods where numerical methods such as finite elements are combined with neural networks in a compatible, stable way.
Tools	Python, HPC-computing, FEniCS, Machine Learning

Activity	Notably - Novel cascade technology for optimal utilization of animal and marine by products
Period	2018-2021
Role	Work-package leader
Staffing	Funded by Norwegian Research Council (Work package: 2 MNOK)
Description	Currently about 50% of chicken and fish are wasted in production. This project aims at developing simulation tools for improving hydrolysis and making proteins etc available for utilization in other products.
Tools	Python, HPC-computing, FEniCS, Machine Learning