

CHRISTIAN VALDEMAR LORENZEN

Curriculum Vitae

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ABOUT

Who am I?

Ph.D. in Applied Mathematics from SDU, Odense, Denmark. Special interests are *Computational & Applied Mathematics, Differential Equations, Programming, Data Analysis, Machine Learning, Optimization, Algorithms* and *Mathematical Modeling*. I value working as part of a team and have a general interest in and knowledge of technology.

What can I offer?

Well-developed analytical skills for problem-solving. Experience in presenting various difficult subjects for different age groups and levels. Good people- and communication skills from talks, teaching, and volunteer work. Doing research in an interdisciplinary field combining Computer Science, Mathematics and Molecular Biology has strengthened my ability to work with people from other fields.

EDUCATION

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| JAN 2018 | Ph.d. in Applied Mathematics , University of Southern Denmark
Topic: "Computational modeling of Fluorescence Photobleaching"
Advisors: Achim Schroll and Daniel Wüstner |
| OKT 2014 | Cand.Scient in Applied Mathematics , University of Southern Denmark
Topic: "Numerical Simulation of Fluorescent Microscopy Images of Living Cells"
Quote from the suggest for DMF specialepris 2014:
"The thesis is a masterpiece of interdisciplinary research".
Advisors: Achim Schroll and Daniel Wüstner
ECTS GRADE: 12 |
| JUNI 2012 | B.Sc in Applied Mathematics , University of Southern Denmark
Topic: "Segmentation of fluorescent microscopy images of living cells"
Advisor: Achim Schroll
ECTS GRADE: 12 |
| JUNI 2008 | High school graduation - HTX (Studentereksamen), Odense Tekniske Gymnasium
Field of study: Natural science
AVERAGE GRADE: 10.1 |

WORK EXPERIENCE

2018 - NOW	Research Assistant <i>at University of Southern Denmark (SDU), Odense</i> Research and outreach work. Taught classes in Partial Differential Equations and Applied Math in Science. Held small seminars on Machine Learning and Python programming. A timelimited employment that ends December 8th, 2018.
2014 - 2017	Ph.d. student <i>at University of Southern Denmark (SDU), Odense</i> As a part of my ph.d. employment I have had several teaching responsibilities: <ul style="list-style-type: none">• Teaching Assistant in 7 different math courses.• Member of the board PHILOS, which organizes academic events for Ph.D. students.• Made various events for high school students.• Presentation of my work at serval high level math conferences.
2012 - 2013	Teaching Assistant <i>at University of Southern Denmark (SDU), Odense</i> Taught classes in calculus.
2000 - 2016	Magician and juggler Performances at different events for adults and children.
2009	Electrician <i>at V. Johansen og søn</i> First half year introductory course and worked as apprentice for 3 months.
2007	Technician <i>at Cirkus Dannebrog</i> Light, sound and construction worker.

GRANTS

NOV. 2017	Granted 30.000 Dkk and 30.000 node hours as PI as "winner of SSC"
AUG. 2017	Granted 17.000 node hours as PI: "SDU supercomputer challenge (SSC) finalist." (\approx 50.000 DKK.).
DEC. 2014	Granted 1/3 of a Ph.d. position by the SDU eScience Center (\approx 400.000 DKK.).

VOLUNTEER EXPERIENCE

2015 - 2018	Board Member (treasurer) <i>of our house-owners' association.</i> Together with three others I form the board in our owners' association. I have been responsible for the finances and organisation.
2016 - 2018	Mentor <i>at Teknologiskolen</i> A robot society, where I taught kids to build and code their own robots.
2008 - 2017	Board Member <i>at Cirkus Flik Flak</i> Cirkus Flik Flak is a Danish circus of children and young people which is driven purely on the work of volunteers. My contribution have primarily been on the technical part. In the beginning of 2016 I worked as project manager regarding acquisition of a new circus tent.
2006 - 2016	Circus instructor <i>at Cirkus Flik Flak</i> One to twice a week I taught children different circus disciplines to give them positive experiences and strengthen their daily development.

COMPUTER SKILLS

- PYTHON** The language which I primarily used during my PhD for numerical simulations with FEniCS, scientific image editing and data analysis.
- C++** Used in several projects where the computation time is crucial, e.g. rasterization to calculate the view quality from a house in a 3D mesh. It was implemented in C++ from which a Python extension module was built with the SWIG compiler, such that FEniCS users are able to access and use it from PYTHON.
- JAVA** Used in programming courses during my education.
- R** I have taught several classes in R and used it as a statistical tool to show and analyse data.
- MATLAB** For implementation of numerical methods to solve stochastic differential equations and in connection with the SDU Supercomputer Challenge for implementation of an algorithm that finds a day in the history which looks like tomorrow, based on machine learning (Neural Network).
- LINUX** User experience doing software development (Ubuntu).
- L^AT_EX** All my thesis and other work is written in L^AT_EX.

Besides that, I am a user of, MICROSOFT OFFICE, GIT, DOCKER, MAPLE, FENICS, etc.

LANGUAGES

DANISH: Native speaker
ENGLISH: Fluent

DRIVING LICENCE

Category B (Normal car)

PUBLICATIONS

- 2018 | Christian V. Hansen, Hans J. Schroll, and Daniel Wüstner.
"A discontinuous Galerkin model for fluorescence loss in photobleaching of intracellular polyglutamine protein aggregates"
Submitted to BMC Biophysics.
- 2018 | Christian V. Hansen, Hans J. Schroll, and Daniel Wüstner.
"A Discontinuous Galerkin Model for Fluorescence Loss in Photobleaching."
Scientific reports, by Nature.
- 2018 | Ebise A. Abdi, Christian V. Hansen and Hans J. Schroll.
"An adaptive E-scheme for conservation laws"
ENUMATH 2017 proceedings, by Springer.
- 2015 | Christian V. Hansen, Hans J. Schroll, and Daniel Wüstner.
"Computational modeling of fluorescence loss in photobleaching."
Computing and Visualization in Science, by Springer.

OTHER PROJECTS

- 2017 | SDU Supercomputer Challenge (Winner)
Searchable catalogue over market situations by the use of Machine Learning and Neural Networks, collaboration with Ørsted (former DONG).
- 2016 | Simulation of flow and view with applications in computational design of settlement layouts.
Find the most optimal settlement layout based on view and flow simulations. Preprint on arXiv.
- 2013 | One wheeled segway
One Wheel Segway build from an old unicycle frame, a MagicPie 3 hub motor and an Arduino.