

Curriculum Vitae for Simen Tennøe

Personal information

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Born:	19.09.1987	Nationality:	Norwegian

Summary

I am a computational scientist with a broad education in computational physics and computational neuroscience. I have much experience with learning new disciplines and enjoy using the computer to solve complex problems, create models and numerical simulations and perform data analysis.

Technical skills

Frameworks	Matplotlib, NumPy/SciPy, Pandas, Scikit-Learn, XGBoost, MPI
Languages	Python, C++, also used: Matlab, Fortran, C
Tools	Git, Docker, LaTeX, Linux, DocOnce, Confluence, Jira

Education

2014 – 2019	Ph.D. Working with computational neuroscience at the University of Oslo. My work was focused on quantifying uncertainties in computational models of neurons and neural networks. Towards this end I have created a Python toolbox, found on Github, tailored for performing these calculations in neuroscience. My Ph.D. work also includes learning new subjects, tools, and techniques as necessary, as well as presenting my work in a wide variety of settings.
2011 – 2013	Master of Astronomy. I specialized in numerical astrophysics and cosmology. I developed software “from scratch” in C++ that compares the results from large-scale N-body simulations of the universe with observational data. This problem is computationally intensive and the work included implementing advanced clustering algorithms, parallelization using MPI, and large-scale data analysis.

2007 – 2010	Bachelor of Physics, Astronomy and Meteorology Specialization in physics.
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Professional experience

2019 –	Consultant at Expert Analytics AS.
2014 – 2019	Ph.D. See education section above.
2014	Software engineer at Schlumberger. I worked on developing software (Petrel) in C++ for modeling in oil and gas reservoirs.
2013, 2009, 2008	Teaching assistant at the University of Oslo in a Python programming course - "Introduction to programming with scientific applications". The work of a teaching assistant is to manage a class of students in their work with weekly compulsory programming projects. Additionally I corrected about 100 exercises from students every week.
2012, 2011	Summer job at the Institute of Theoretical Astrophysics at the University of Oslo. The first year I performed data reduction on a set of astronomical images and created software to automate the process (2011). The second year I implemented support for parallelization, using MPI, for what turned into the software I developed during my master (2012).

Languages

English	Fluent
German	Basic
Norwegian	Native

Extended descriptions of selected projects

Activity	Developing software for predicting targets for cancer immunotherapy.
Period	2019 –
Role	Data Scientist
Staffing	20 Developers/Data Scientists/Bioinformaticians
Description	The company develops bioinformatics software for predicting tumor targets for use in precision cancer immunotherapy. The goal is to select the best targets in the patients tumor, from from genomic data, to be used in cancer immunotherapy. My role is to develop machine-learning methods applied to genomic data for predicting the end result of various different biological processes.
Tools	Python, Keras/Tensorflow, Numpy, Pandas, Scikit-learn, and XG-Boost

Activity	Ph.D.: Uncertainty quantification in neuroscience.
Period	2014 – 2019
Role	Researcher and developer

Staffing	1 researcher
Volume	75%
Description	The goal of my Ph.D. has been to create a Python toolbox tailored to perform uncertainty quantification and sensitivity analysis of computational neuroscience models. The toolbox implements both quasi-Monte Carlo methods and polynomial chaos expansions. It also calculate the uncertainty and sensitivity of salient model response features.
Tools	Python, Numpy, Docker, Travis, and Git
Activity	Writing a textbook teaching first year biology students programming and computational modeling.
Period	2014 – 2019
Role	Author
Staffing	4 researchers
Volume	25%
Description	I co-authored a new textbook titled “Introduction to analysis and modeling in biology with Python”, that adress the general lack of computational education in biology. This textbook is used as curriculum in the course “BIOS1100 – Introduction to computational models for the biosciences”. The book is project based, and the students are introduced to various biological problems and use programming to solve these problems. All programming happens in the context of biology. The philosophy behind the textbook is just-in-time teaching, and programming concepts are only introduced when they are needed to solve a given problem. The book is written using DocOnce, which enables us to give the students the book as both a traditional pdf, as well as interactive Jupyter Notebooks.
Tools	DocOnce, Python, Jupyter Notebook, and Git