Curriculum Vitae

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Personal summary

In October 2017 I started as a Research Engineer at Simula Research Laboratory in the department for Scientific Computing, and will work with development of computational modeling tools primarily with application in electrophysiology.

Before I started as a Research Engineer I was a PhD student in the Cardiac Modelling group in the department for Scientific Computing, also at Simula Research Laboratory. In my PhD I worked with patient specific models of the cardiac mechanics, and defended it at January 17th 2018.

I graduated in 2014 after finishing a joint master degree in Applied and Engineering Mathematics at NTNU in Trondheim and DTU in Copenhagen. My fields of interests are mathematical modelling, geometric modelling and image processing. In my master thesis I studied methods for image classification of ultrasound images based on convolutional neural networks.

Education

- 2014 - 2017: PhD Scientific Computing, Simula Research Laboratory and University of Oslo, Oslo (Norway)

  Title: Patient-specfic computational modeling of cardiac mechanics.

- 2012 - 2014: MSc. Applied and Engineering Mathematics, Nordic Master in Applied and engineering mathematics(N5TeAM), Trondheim (Norway), Copenhagen (Denmark)

  Joint master program with first year at DTU in Copenhagen, and second year at NTNU in Trondheimm. Degree from NTNU Trondheim: Master of Science in Applied and Engineering Mathematics. Degree DTU Copenhagen: Master of Science in Engineering. Master thesis title: Wavelet Techniques in Medical Imaging. Final Grade A (Best: A Average: A Worst: C)

- 2010 – 2012 MSc. Physics and Mathematics, NTNU, Trondheim (Norway).

  Specialized in industrial mathematics. Switched to N5TeAM after finishing first year at industrial mathematics.

- 2006 – 2008: Sergeant, Army Officer Candidate School, Skjold (Norway).

  Two-year officer school in the engineering battalion. Final Grade C (Best: A Average: B Worst: C)

Technical

- Expert: Python, Unix, LaTeX, FEniCS, Linux,
- Intermediate: Docker HTML, Bash, Matlab, Git, Jupyter, VTK, Gmsh, Paraview
- Basic: CSS, JavaScript, C++, C, C#, Kubernetes, R, Swig

Employment

- 2017-present: Research Engineer, Simula Research Laboratory

  Development of high performace copmuitational software tools and mathematical models for the study of Human Induced Pluripotent Stem Cells (hiPSC)

- 2016: Corrector, University of Oslo

  Correcting assignments for master students in the course INF4331, Problem solving with high level languanges

- 2009 – 2013 Teaching Assistant, Norwegian University of Science and Technology, Trondheim.

  Assisted groups of 25 students in Calculus 1, Calculus 2, Calculus 3, Statistics and Information Technology.

- 2012 – 2012 Summer Intern, Energy Micro, Oslo, Norway.

  Porting the Energy Micro University program to Giant Gecko Starter Kit. Improving code and embedded documentation as well as look and usability of the doxygen generated documentation for all kits.

- 2011 – 2012 Mentor, ENT3R NTNU, Trondheim.

  Responsibility for a class of 20 students from high school. Help students with mathematics, and motivate them for further education in science.

- 2011 – 2011 Summer Intern, Norwegian Defence Research Establishment (FFI), Kjeller.

  Created a GUI in Visual C# and Matlab to read the log files, and use this information to calculate and plot the desired data.

- 2007 - 2008: Squad leader, Engineering Batalion, Norwegian Army

  Responsibilities: Educate soldiers with background in construction, and lead small construction projects.

Activities

- 2015-2016 Member of Excepert Committee, Nokut, Oslo.

  Responsible for evaluating an application for accreditation of a PhD program at Bergen university college together with three other experts. Report

- 2011-2012 Business Manager, ENT3R NTNU, Trondheim.

  Responsible for organizing student events and invite companies to these events.

- 2011-2012 Chairman for the Business Committee, Nabla - Applied Physics and Mathematics student association , Trondheim.

  Overall responsibility for hosting business presentations, publishing catalogue with summer jobs, and connect students to the industry.

- 2011-2012 Member of the Business Committee, Nabla - Applied Physics and Mathematics student association , Trondheim.

  Responsible for contacting 20 companies and arrange business presentations.

Thesis

- Finsberg, H.N., 2017. Patient-Specific Computational Modeling of Cardiac Mechanics. Series of dissertations submitted to the Faculty of Mathematics and Natural Sciences, University of Oslo. PDF
- Finsberg, H.N., 2014. Wavelet Techniques in Medical Imaging: Classification of UltraSound Images using the Windowed Scattering Transform (Master's thesis, Institutt for matematiske fag). PDF

Publications

- Balaban, G., Finsberg, H., Funke, S., Håland, T.F., Hopp, E., Sundnes, J., Wall, S. and Rognes, M.E., 2018. In vivo estimation of elastic heterogeneity in an infarcted human heart. Biomechanics and modeling in mechanobiology, pp.1-13. DOI PDF
- Finsberg, H., Xi, C., Tan, J.L., Zhong, L., Genet, M., Sundnes, J., Lee, L.C. and Wall, S.T., 2018. Efficient estimation of personalized biventricular mechanical function employing gradient-based optimization. International journal for numerical methods in biomedical engineering, p.e2982. DOI PDF
- Finsberg, H., Balaban, G., Ross, S., Håland, T.F., Odland, H.H., Sundnes, J. and Wall, S., 2018. Estimating cardiac contraction through high resolution data assimilation of a personalized mechanical model. Journal of computational science, 24, pp.85-90. DOI PDF
- Balaban, G., Finsberg, H., Odland, H.H., Rognes, M.E., Ross, S., Sundnes, J. and Wall, S., 2017. High-resolution data assimilation of cardiac mechanics applied to a dyssynchronous ventricle. International journal for numerical methods in biomedical engineering, 33(11), p.e2863. DOI PDF

Conference proceedings and preprints

- Finsberg, H., Luybarskii, Y., Growth of entire functions via Borel transform, TMA4500 Specialization project, 2013 DOI PDF

Posters

Talks

References

Available on request.