

# LINDE HESSE

## EDUCATION

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### DPhil in Engineering

*University of Oxford*

Oct. 2019 - present

*Oxford, UK*

DPhil in Engineering focusing on the development of deep-learning methods to analyse the fetal brain during gestation from 3D ultrasound volumes.

Supervisor: Dr. A.I.L. Namburete

### MSc in Medical Engineering

*University of Technology Eindhoven (TUE)*

Sept. 2016 - June 2019

*Eindhoven, NL*

Dissertation: Primary tumor origin classification of lung nodules in spectral CT using transfer learning.

### Exchange Biomedical Engineering

*Instituto Superior Tecnico Lisboa*

Feb. 2018 - July 2018

*Lisbon, PT*

Extracurricular exchange semester

### Bachelor Biomedical Engineering

*University of Technology Eindhoven*

Sept. 2013 - Aug. 2016

*Eindhoven, NL*

## RESEARCH EXPERIENCE

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### Research Intern Deep Learning

*Martel Lab, Sunnybrook Research Centre, University of Toronto*

Feb. 2019 - June 2019

*Toronto, CA*

Supervisors: Prof. Dr. A. Martel and Dr. M. Veta

### Graduate Intern

*Image Sciences Institute, University Medical Center Utrecht*

June 2018 - Jan. 2019

*Utrecht, NL*

Supervisors: Dr. V. Cheplygina, Prof. Dr. J.P.W. Pluim and Prof. Dr. P.A. de Jong

### Research Intern Image Analysis

*Verbeeten Institute*

Sept. - Nov. 2017

*Tilburg, NL*

Supervisor: Dr. M. de Smet

## TEACHING EXPERIENCE

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### GirlsWhoML

*Class Lead and Content Creator*

March 2021 - Present

GirlsWhoML is an initiative to provide women interested in machine learning with an online introductory course into machine learning.

### Department of Computer Science, University of Oxford

*Course Demonstrator*

Nov. 2020

*Oxford, UK*

Deep Learning and Machine Learning Course, which is part of the doctoral training program at the Department of Computer Science.

### Department of Biomedical Engineering, TUE

*Course Demonstrator*

Sept. 2015 - Oct. 2018

*Eindhoven, NL*

Courses: Design (BSc), Human Metabolism (BSc) and Medical Image Analysis (MSc)

## OTHER ACTIVITIES

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### Oxford Women in Computer Science

*President*

*June 2021 - Present*

In the Oxford Women in Computer Science Society (OxWoCS) we aim to support and promote women working in computer science by organising a large number of events throughout the academic year. As President I am responsible for overseeing all activities as well as maintaining contact with our sponsors and the Department of Computer Science.

*Seminar Organiser*

*June 2020 - June 2021*

As seminar organiser I have organised two seminars per term where we invited established female researchers to talk about their research.

### AthenaStudies Eindhoven

Sept. 2015 - Nov. 2016

*Department Manager*

*Eindhoven, NL*

Responsible for organising additional tutoring classes at the Department of Biomedical Engineering to help students prepare for their BSc exams.

### Pre-University College, TUE

Sept. 2014 - March 2016

*Workshop organiser*

*Eindhoven, NL*

Organised weekly outreach workshops for high school students in order to get them acquainted with technology and show them the possibilities of doing an engineering degree.

## SKILLS

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### Languages

Dutch (native), German (native), English (fluent)

### Coding Languages

Python, Matlab and C++

## PUBLICATIONS

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[1] **L. S. Hesse\***, M. K. Wyburd\*, M. Aliasi, M. C. Haak, A. T. Papageorghiou, and A. I. Namburete. Automated grading of healthy fetal cortical development using age prediction in 3D ultrasound. In *Perinatal, Preterm and Paediatric Image Analysis (PIPPI), satellite event of Medical Image Computing and Computer Assisted Intervention society (MICCAI)*, 2021 **accepted for oral presentation**

[2] **L. S. Hesse**, G. Kuling, M. Veta, and A. L. Martel. Intensity augmentation to improve generalizability of breast segmentation across different mri scan protocols. *IEEE Transactions on Biomedical Engineering*, 68(3):759–770, 2020 ([link](#))

[3] **L. S. Hesse** and A. I. Namburete. Improving u-net segmentation with active contour based label correction. In *Annual Conference on Medical Image Understanding and Analysis*, pages 69–81. Springer, 2020 ([link](#))

## CONFERENCE ABSTRACTS

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[4] **L. S. Hesse\***, M. K. Wyburd\*, M. Aliasi, F. Moser, M. C. Haak, A. T. Papageorghiou, I. 21st Consortium, and A. I. Namburete. Automated grading of fetal cortical development using deep-learning algorithms: a preliminary 3D ultrasound study in healthy fetuses. In *International Society of Ultrasound in Obstetrics & Gynecology (ISUOG)*, 2021 **accepted for oral presentation**

[5] **L. S. Hesse**, M. Aliasi, A. T. Papageorghiou, M. C. Haak, W. Xie, M. Jenkinson, and A. I. Namburete. Few-shot subcortical brain structure segmentation in 3D fetal brain ultrasound. In *Organisation for Human Brain Mapping (OHBM)*, 2021 **accepted for poster presentation**

\* indicates equal contribution