



# Thor Vestergaard Christiansen

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## EDUCATION

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- 2023 - Present    **PhD Student at the Technical University of Denmark**  
Advised by Professor J. Andreas Bærentzen and Assistant Professor Morten R. Hannemose  
PhD topic: Neural Form Representation  
Visiting PhD student at the Dynamic Graphics Project (DGP) lab at the University of Toronto
- 2021 - 2023    **Honours MSc. in Engineering at the Technical University of Denmark**  
Master of Science in Mathematical Modelling and Computation  
Honours student advised by Associate Professor Jeppe Revall Frisvad  
Master thesis: Neural Volumetric Shape Representations
- 2017 - 2021    **BSc. in Engineering at the Technical University of Denmark**  
Bachelor program in Electrical Engineering  
Bachelor thesis: Sensorbased navigation for drones
- 2019    **Exchange student on my bachelor at ETH Zürich, Switzerland**  
Department of Information Technology and Electrical Engineering
- 2014 - 2017    **High School: Aarhus Katedralskole Gymnasium, Denmark**
- 2013 - 2014    **High School student at Rio Rancho High School, NM, USA**  
Exchange student through the Rotary Youth Exchange Program

## PUBLICATIONS

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- 2023    [Neural Representation of Open Surfaces](#)  
Thor V. Christiansen, J. Andreas Bærentzen, Rasmus R. Paulsen, Morten R. Hannemose  
ACM / Eurographics Symposium on Geometry Processing (SGP) 2023

## TALKS

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- 2023    **Talk at the [Pioneer Centre for AI](#), Copenhagen**  
I gave a [talk](#) on the topic Neural Form Representation and addressed some of the challenges with regards to using learning based methods for 3D shape representation.

## RESEARCH EXPERIENCE

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### 2021 **Special course on Surface Reconstruction from Point Clouds**

In this special course I worked on a simple algorithm that could mesh a point cloud based on the tetrahedralization of the point cloud. The special course was supervised by Professor at the Technical University of Denmark, J. Andreas Bærentzen.

### 2022 **Special course on Tomographic 3D Printing**

In this special course I created a ray tracing algorithm to compute sinograms in order to print objects on a tomographic volumetric 3D printer. Furthermore, I made a script that could compute the jaccard index as a similarity measure between the design and the printout. The special course was supervised by Associate Professor at the Technical University of Denmark, Jeppe Revall Frisvad, and Assistant Professor at the Technical University of Denmark, Yi Yang.

### 2022 **Special course on Neural Surface Representation**

In this special course I created a neural network that could represent open surfaces. Besides representing the shapes, the objects could also be classified and clustered according to their geometric characteristics using a self optimized latent space. The special course was supervised by Professor at the Technical University of Denmark, J. Andreas Bærentzen, Professor at the Technical University of Denmark, Rasmus Reinhold Paulsen, and Assistant Professor at the Technical University of Denmark, Morten Rieger Hannemose. The special course formed the basis of my master thesis, which was later published at the Symposium on Geometry Processing (SGP) 2023.

## TEACHING EXPERIENCE

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### 2023 & 2024 **Teaching Assistant in 02504 Computer Vision**

Course offered at the **Technical University of Denmark** covering topics such as Key-point detection, Camera Calibration, Structure from Motion, Image stitching and Structured Light Scanning. My work as a TA included weekly consultations with the students. I was a TA in the course during the Spring semesters of 2023 and 2024

### 2022, 2023 & 2024 **Teaching Assistant in 02580 Geometric Data Analysis and Processing**

Course offered at the **Technical University of Denmark** covering topics such as Delaunay Triangulation, Distance fields and Isosurface Polygonization, Volumetric Reconstruction, the Laplace Beltrami Operator and Geodesics. My work as a TA included weekly consultations with the students and correcting assignments. I was a TA in the course during the Spring semesters of 2022, 2023 and 2024.

### 2019 & 2021 **Teaching Assistant in 01037 Advanced Engineering Mathematics 2**

Course offered at the **Technical University of Denmark** covering topics such as Homogenous/Inhomogeneous differential equations, Stability of systems, Transfer functions, Infinite series and Fourier series. My work as a TA included daily consultations with the students and correcting assignments. I was a TA in the course in August 2019 and in August 2021.

## HONOURS AND AWARDS

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**2018 Winner of Oticon Audio Explorers**

Winner of the Oticon Audio Explorers Challenge, which is a case competition about improving hearing aids (in this case improving the user interface to make it more intuitive) arranged by the Danish hearing aid company Oticon.

**2016 Winner of The Junior Researchers Project**

Winner of The Junior Researchers Project arranged by the University of Copenhagen and Aarhus University. I worked on a project that investigated the European Space Agency's (ESA) Rosetta mission.

**2015 Designed an experiment, which was conducted onboard the International Space Station by the Danish Astronaut, Andreas Mogensen**

Winner of the Danish Broadcasting Corporation's (DR) and the European Space Agency's (ESA) competition on proposing an experiment to be conducted by the first Danish Astronaut, Andreas Mogensen, onboard the International Space Station during his IRIS-mission. A video of the experiment was recorded by Andreas Mogensen and uploaded to YouTube by DR. It can be accessed through the following link: <https://www.youtube.com/watch?v=rAAQ3yaZ3JE>.

## OTHER ACTIVITIES

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**2014 - 2017 Akademiet for Talentfulde Unge | Midt**

During gymnasium (High School in Denmark) I was selected to be a member of Akademiet for Talentfulde Unge | Midt (The Academy for Talented Youth | Midt) along with other academically motivated students from other gymnasiums in my region, Region Midtjylland. This extracurricular activity included lectures and seminars on various topics within natural science and social science and a summer camp.