Mark Bo Jensen

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CONTACT INFORMATION

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WORK EXPERIENCE

Tenure Track Assistant Professor 02/2025-present
Technical University of Denmark, full-time

My research is in the emerging field of Perception Engineering, using Extended Reality Technologies to create models of, understand, and explore human perception and cognition. An inter-disciplinary field requiring the collaboration between many fields from engineering to cognitive sciences. My passion is exploring computer graphics in this context to create more immersive and convincing extended reality experiences.

Support Teacher 02/2020-Present
Student Counseling Service

Mentoring engineering students with special needs at the Technical University of Denmark, by guiding them in structuring and planning their study as well as unpacking teaching material that can be hard to interpret.

Team Lead 01/2024-01-2025
Dalux, full-time

Responsible for leading a team of 6 engineers who are developing Dalux's mobile graphics engines. Dalux has three mobile graphics engines, one for 2D visualizations, one for 3D visualizations and one for 3D visualizations in Augmented Reality. They are all built using Vulkan, and OpenGL. My role entails project management, where I set the direction and build road-maps. Introduce new technologies and algorithms to make sure that Daluxs mobile graphics engines remain best in class, as well as managing the daily workflow, and tasks of the team.

External Lecturer 01/2024-01/2025
Technical University of Denmark, part-time

Developing and teaching a course where the students will learn how to model experiences for virtual reality, augmented reality, mixed reality, etc (collectively xR). Initially, students are introduced to methods and technologies for acquisition of geometry, material appearance, and illumination. This is followed by a series of lectures on technologies for xR and content modelling methods. Starting from roughly the middle of the course, students do their own modeling for an xR experience in a project which stretches over the last half of the course.

Postdoctoral Researcher 11/2022-12/2023

Technical University of Denmark, full-time

Working on predictive rendering of semi-transparent densely packed anisotropic materials with volume path tracing in an NVIDIA Optix-based framework. While supervising other Ph.D. students in the group, and developing and teaching a new Masters Course called Creating Digital Visual Experiences.

PhD. Student 09/2019-10/2022

Technical University of Denmark, full-time

Title: Virtual-Reality Based Visualization of Large Geometric Data.

Popular Science Summary: Understanding and forming new hypotheses about data are two fundamental aspects shared by many scientific disciplines. When working with 3D data, these aspects are largely facilitated by visualization. Visualization, however, becomes more challenging as data complexity increases. To tackle this complexity, we need new ways of visualization that simplify data exploration and understanding. Virtual Reality has the potential to be one such way.

In this Ph.D. project, we explore the landscape of existing visualization tools, game engines, and graphics application programming interfaces. Based on our findings we put forth principles and recommendations for the development of new Virtual Reality-based visualization tools. We also explore how precise interaction in Virtual Reality is when compared to desktop solutions, and how portals can be used as a general metaphor for interaction in Virtual Reality.

Throughout this process, we have developed a Vulkan-based tool for Virtual Reality-based visualization. We show how this tool can be used with large 3D datasets, without needing to simplify the data. We likewise explore the perceived difficulties of creating Virtual Reality-based visualization tools. In doing so we demonstrate that Virtual Reality has become a mature alternative to existing solutions for visualization.

Software Developer 04/2018-09/2019

Dalux, part-time

Working on Google Tango, ARKit and ARCore related software. Developed a real-time 3D scanner in OpenTK using the Google Tango developer kit, while exploring how to use ARKit and ARCore for similar application. `https://www.dalux.com/`

Pipeline Engineer 10/2017-10/2018

Ghost VFX, part-time

Created an overview of the current pipeline and planned out the development of a new internal pipeline tools to better support the artists, and helped out with animation and rigging. `http://www.ghost.dk/`

Animator 07/2014-04/2015

Lohika ApS, part-time

Started as an animator, and ended up being more of a generalist.The game can be found here `https://store.steampowered.com/app/356090/Machineers__Episode_1_Tivoli_Town/`

Lead 3D Artist 08/2013 - 08/2014

Den Danske Filmskole, full-time

Managed all the artists that worked on the game and developed the asset pipeline used for the production. The game can be found here: `https://appadvice.com/app/plantman/860586104`.

Animator 04/2013-06/2013

Wisdom Bell Productions, full-time
Intro sequence 2D Animator.

CG Artist 02/2012 - 02/2013
Beta Dwarf
Worked on a cinematic to promote the game. Worked on everything from modelling to animation.

Technical Artist 11/2012- 12/2012
Zero Point Software
Worked on content for their kickstarter campaign.

Lead background Artist 06/2012 - 12/2012
Den Danske Filmskole, Full-time
Worked on a 2D puzzle game that runs in unity, leading and managing two other background artists. It can be found here `https://appadvice.com/app/shadow-of-kharon/599953132`.

Technical Artist 12/2011 - 01/2012
Den Danske Filmskole, Full-time
Worked on a game called Cosmic Top Secret(YHEM) that runs in unity. It can be found on steam `https://store.steampowered.com/app/785100/Cosmic_Top_Secret/`

COLLABORATORS

Jeppe Revall Frisvad `https://people.compute.dtu.dk/jerf/`
Associate Professor of Computer Graphics, Section for Visual Computing, Technical University of Denmark

J. Andreas Bærentzen `https://people.compute.dtu.dk/janba/`
Professor of Computer Graphics, Section for Visual Computing, Technical University of Denmark

Daniel Zielasko `https://sites.google.com/view/danielzielasko/home`
Associate Professor of Computer Science, Human Centric Computing Lab, Technical University of Denmark

Kevin Doherty `https://kdoherty.ie`
Assistant Professor of Human-Computer Interaction, University College Dublin

FUNDING

Thomas B. Thriges Fond, 2025 80.690kr
For establishing an immersive virtual laboratory with Daniel Zielasko

Travel Funding DTU, 2025 15.000kr
For Visiting Collaborators at Eindhoven University of Technology

DTU InnoExplorer Grant, 2023 1.500.000kr
For development on Al-EYE with Fiona B Mulvey and Kevin Doherty.

DTU InnoExplorer Grant, 2022 1.500.000kr

For development on Al-EYE with Fiona B Mulvey.

Augustinus Fond 10.000kr
For External Research Stay.

STIBO Fond 15.000kr
For External Research Stay.

OTTO Mønsted Fond 15.000kr
For External Research Stay.

EDUCATION

Academy of Science Communication 10/2025-05/2026
Royal Danish Academy of Sciences and Letters
Selected for an intensive science communication program focused on media relations, public engagement, and multi-platform research dissemination.

University teacher training programme 09/2025-04/2026
Technical University of Denmark - DTU
Completed a comprehensive pedagogical training program focused on engineering education, constructive alignment, and evidence-based teaching practices. Culminated in a defended Teaching Portfolio and a data-driven Capstone Project.

Doctor of Philosophy in Computer Graphics 09/2019-10/2022
Technical University of Denmark - DTU
Title: Virtual-Reality Based Visualization of Large Geometric Data.

Visiting Researcher 09/2021-12/2021
University of Toronto
Exploring the use of portals for interaction in Virtual Reality.

MSc. Digital Medial Engineering 09/2017-08/2019
Technical University of Denmark - DTU
Master of Science in Engineering (cand.polyt.)

BSc. Software Technology 09/2014-08/2017
Technical University of Denmark - DTU
Engineering degree in software technology.

BSc. Software Technology 09/2016-02/2017
Tokyo Institute of Technology
Exchange semester from September 2016 until February 2017.

Internship 01/2014-05/2014
Eucroma
Cross media development.

Course Work 01/2014-12/2014
CgSociety

Took online courses in PYQT, Mattepainting, Facial Rigging, Python, 2D Environment design, 3D Environment design, Fundamentals of digital painting and Animation for Games.

Workshops 09/2010-04/2012
Truemax Academy
Fundamentals of computer graphics and drawing.

TEACHING EXPERIENCE

Graphics Lab 02/2021-05/2021
DTU
Teaching assistant in the Graphics Lab Special course, where the primary task was to supervise groups of the students doing different graphics related projects.

Computational Data Analysis 02/2020-05/2020
DTU
Teaching assistant in the course 02582 Computational Data Analysis, where the primary task was to help the students acquire knowledge of advanced computer intensive data analysis methods with applications to e.g. life sciences. These include problems with many variables and relatively few observations, images etc. `https://kurser.dtu.dk/course/02582`

High-Performance Computing 01/2020
DTU
Teaching assistant in the course 02614 High-Performance Computing, where the primary task was to help the students acquire knowledge of writing high performance code for CPU and GPU as well as how to execute code on clusters. `https://kurser.dtu.dk/course/02614`

Computational Data Analysis 02/2019-05/2019
DTU
Teaching assistant in the course 02582 Computational Data Analysis, where the primary task was to help the students acquire knowledge of advanced computer intensive data analysis methods with applications to e.g. life sciences. These include problems with many variables and relatively few observations, images etc. `https://kurser.dtu.dk/course/02582`

Real-Time Graphics 02/2019-05/2019
DTU
Teaching assistant in the course 02564 Real-Time Graphics, where the primary task was to help the students implement advanced real-time graphics techniques for use on desktop platforms and for virtual reality in C++ as well as help the students understand the underlying concepts. `https://kurser.dtu.dk/course/2018-2019/02564`

Health Care Technology 09/2018-12/2018
DTU
Teaching assistant in the course 02515 Health Care Technology, where the primary task was to provide support for the students that were learning how to program with *C#*, as well as use Unity together with the Kinect to implement an IT health care technology application. `http://kurser.dtu.dk/course/2018-2019/0251`

SUPERVISED STUDENTS

Software Rasterization with Vertex Data Compression

Yang Xu

Master's Thesis exploring and comparing software rasterization with the vertex and mesh shading pipelines.

Using Unity and Blender to create a synthetic movement dataset
Krystallia-Zoi Angeli

A special course that investigated how to create movement and animation datasets.

Exploring the old superstitions of Amulets: an AI-driven Augmented Reality Experience
Sune Mikkel Stobberup Rasmussen

Master's Thesis that created an Augmented Reality-based exhibition at the National Museum of Denmark

Rendering of Very Large Scenes: A modern level-of-detail approach
Öjvind Nilsson

Masters thesis, that explored continuous level of detail with meshlets.

Optimering af laboratorieprocesser ved hjælp af Augmented Reality
Naside Celik

Bachelors thesis that explored the use of Augmented Reality to optimize laboratory work at Novo Nordisk.

Segmentation-based image pre-processing for NERF 3D
Khalil Ahmadi

Bachelors thesis that aims to improve the quality of the NERF-based 3D reconstruction of individual objects by pre-processing the input images.

3D reconstruction using outlier-aware photogrammetry
João Augusto César Moutinho

Masters thesis that explores the possibility to achieve a 3D reconstruction through photogrammetry focusing on the preprocessing and processing phases where images will need to be "cleaned" of outlier artifacts.

XR Engine for Real-Time Gaze-Contingent Image-Processing and Rendering
Mateusz Sadowski

Master's Thesis exploring the requirements to build a fast Augmented and Mixed Reality Engine to help the visually impared.

Integration of OpenXR With a Vulkan Graphics Engine
Mateusz Sadowski

A project that aimed to integrate the OpenXR API into an exisitng Vulkan graphics engine.

Meshlet Generation
Emil T. Gæde & Rasmus E. Christensen

A project that explored different meshlet generation strategies for the modern rasterization pipeline.

TALKS

Digital Corals - Visualizing Nature's Complexity, Vulkanised 2026 February 2026

Presentation on using Sparse Resources and Vulkan for visualization of large volume datasets

VR-based Perimitry testing, Section for Visual Computing at DTU November 2025
Presentation on using Virtual Reality for Perimitry testing

Driving Digitalisation in Pharma Production, Atrium Workshop September 2024
Presentation on XR Technologies

Virtual Reality-Based Visualization of Large Scientific Data, Vulkanised 2023 February 2023
Presentation on using Vulkan, mesh shaders, multi-view and variable-rate shading for Virtual Reality

Driving Digitalisation in Pharma Production, Atrium Workshop November 2022
Presentation on XR Technologies

EuroVis, Vis-Gap Workshop, Remote Talk June 2021
Paper presentation: Tools for virtual reality visualization of highly detailed meshes

Graphics Lab Course, DTU, Remote Talk May 2021
On Vulkan and OpenXR

Section for Cognitive Systems, DTU, Remote Talk September 2020
On VR in cognitive and neurocognitive research

SERVICE

Committee Member for Conferences

- ISMAR 2026
- IEE VR 2026
- VRST 2025

Reviewer for Journals

- Computer Graphics Forum 2023, 2025, 2026
- EuroGraphics(EG) Long Papers 2020

Reviewer for Conferences

- VisGap 2026
- FDG 2026
- alt.VIS 2025

Advising the Local Government Denmark
On the development of XR technologies for their Technology Radar 2022

SHOWREELS AND CINEMATICS

Animation Showreel
https://youtu.be/Fs-C31hpJcg
Only the animation is done by me.

Rigging Showreel
https://youtu.be/RH-g_zWac9o
All rigging done by me. Every rig works in unity as well. All animation by Sam Surplice.

Plantman Epilogue

https://www.youtube.com/watch?v=rURvZSNiT5Y

Rendered in Maya, however rigs are joint based and could also be imported into unity. Protector modelling done my me.

Plantman Prologue

https://www.youtube.com/watch?v=cgr3jnyYX2g

Rendered in Maya, however rigs are joint based and could also be imported into unity. Protector modelling done my me.

SKILLS

Expertise	Computer Graphics, Scientific Visualization, Mathematical Modelling, Performance Optimization, Virtual Reality, Low Level Programming, Augmented Reality, High Performance Computing, Mixed Reality, Rigging, Animation, Facial Rigging, 3D Modelling
APIs	Vulkan, OpenVR, OpenGL, OpenXR, WebGL, d3.js, PYQT .NET, CUDA
Software	Unity, ParaView, Autodesk Maya Autodesk 3D studio Max, Autodesk Mudbox, Autodesk Motion Builder, ZBrush
Programming Languages	C++, Python, Javascript, C, Matlab, R, melscript, C#, GLSL
Languages	Danish (mother tongue) English (fluent) German (Intermediate/Upper Intermediate) Japanese (some)

REFERENCES

J. Andreas Bærentzen https://people.compute.dtu.dk/jerf/
Professor, Technical University of Denmark jerf@dtu.dk

Jeppe Revall Frisvad https://people.compute.dtu.dk/janba/
Associate Professor, Technical University of Denmark janba@dtu.dk

Phillip Prahl www.ghostvfx.com
EVP head of studio, Ghost VFX phillipp@ghostvfx.com

Mads Doest, PhD
Computer Vision Specialist, Greenwood madsdoest@gmail.com