


Luna Fredenslund

 lunais.me

Work Experience

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| 2024 | AAU - REPAI
<i>Human Object Interaction and Action Detection extensions to thermal images.</i> |
| 2018 – 2021 | Capra Robotics <ul style="list-style-type: none">• Built an E2E robot-demo that can track and follow a specific person using a fine-tuned object detection model on a RGB-D camera feed.• Explored augmentation of semantic segmentation models for fisheye data.• Derived kinematic equations for custom wheel frame, and developed proof of concept for 3D odometry algorithm that reduces drift in uneven terrain. |

Education

2022-2026 | **B.Sc. Physics University of Copenhagen**

Research

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| 2023 – 2024 | Steinhardt Group: Increasing Efficiency of Space Telescopes
<i>I am investigating if we can use more complex filters to reduce the total number of filters needed to estimate properties of galaxies making observations faster.</i> |
| 2022 | Steinhardt Group: Investigation of Novel Star-formation Mechanisms
<i>Measured temperature of dust clouds to understand mechanisms behind unexplained star formation.</i> |
| 2020 – 2021 | Steinhardt Group: Investigation of Hubble Constant Tension
<i>Reduced data from NOT to estimate redshifts of galaxies compared with previous measurements found systematic biases.</i> |
| 2018 – 2019 | Bjoerk Group: Reverse molecular modelling
<i>Developed a proof of concept dense low parameter kernel to increase the resolution of the reinforcement learning agent reducing the number of parameters by up to 90% with minimal performance impact.</i> |

Extra Curricular Activities

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| 2022-2023 | Learning Platform: njoror.com
<i>Conceptualized and developed an individualized mathematics tutoring platform.</i> <ul style="list-style-type: none">• Learns each student's ability and learning style to generate a unique learning path.• Developed custom DSL to program problem templates, and evaluate symbolic mathematical expressions. |
| 2018 | Higgs Detection Neural Network
<i>Developed a neural network that classifies Higgs-$\tau\tau$ decays based on simulation of the ATLAS detector.</i> <ul style="list-style-type: none">• Finalist at INTEL ISEF 2019.• Won CERN prize at EUCYS 2018.• Won Physical Science at Young Scientists Denmark 2018. |

Other Extra Curricular Activities

- 2022-2023 | **Gifted Institute: gifted-institute.com**
Developed, host, and maintain informational website to client specification.
- 2021 | **Taught Online Class**
Voyager II orbital path reconstruction
- Basic Python scientific libraries: Numpy, Scipy.
 - Numerically solve 2nd order ODEs.
 - Classical orbital mechanics.
- 2019 – 2023 | **Volunteer at Unge Forskere**
Helped facilitate judges and contestants at the yearly finale spanning 3 days held alongside ScienceEXPO. Was a preliminary judge in the junior group.
- 2019 | **Aarhus Critical Care Datathon**
Investigated explainability of x-ray classification deep learning models. Found signs that the models were relying on spurious data.
- 2019 | **Consent Management Platform: cookiecook.io**
Conceptualized and developed a service that manages user consent in relation to GDPR on websites.

Miscellaneous

Technologies

Proficient: Python Tensorflow Pytorch Scipy Matplotlib Sklearn Numpy ROS

Adequate: C++ Matlab Javascript Django Pandas

Languages

English (proficient) Danish (native)

Interests

Art Photography Cooking Nature Running