



AAPO LOKKA

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Summary

Soon to graduating Master of Science from Aalto University, with Bioinformatics and Digital Health major. Interested in finding new ways to improve human's personal life with the help of machine learning and other artificial intelligence technologies. Curious to keep on learning and solving new problems.

Skills

Programming Languages Python (Proficient), R (Advanced), SQL (Advanced), C (Competent).

Technologies Git, WSL, Shell Scripting, Power BI, MS Office, VS Code.

Languages Finnish (Native), English (Professional proficiency), Swedish (Good)

Education

- | | | |
|-------------|---|-------------------------|
| 2020 - 2023 | Master of Science Studies (Technology) | Aalto University |
| | <ul style="list-style-type: none">• Major: Bioinformatics and Digital Health• Minor: Machine Learning and Data Science technologies• Master Thesis: Molecular simulations of the effect of electric field on AOT reverse micelles in bulk dodecane and at model electrode surfaces, (Thesis completed at the end of 2023) | |
| 2016 - 2019 | Bachelor of Science (Technology) | Aalto University |
| | <ul style="list-style-type: none">• Major: Chemical Engineering• Minor: Bioinformatics• Bachelor Thesis: Neste-neste faasiseparaatio soluissa, (Liquid-liquid phase separation in cells) | |

Experience

- | | | |
|-------------------|---|--|
| 4/2022
12/2023 | Thesis worker | Soft Materials Modelling Group of Maria Sammalkorpi, Aalto University |
| | <ul style="list-style-type: none">• Responsible for creating and simulating an all-atom and a mesoscale model system consisting of dioctyl sodium sulfosuccinate surfactant in dodecane solvent with electrode surfaces.• Atomistic scale molecular modelling was performed by Gromacs. Mesoscale molecular modelling was performed by a Large-scale Atomic/Molecular Massively Parallel Simulator (LAMMPS).• Wrote Python scripts to create the model and results analysis methods. CSC super-computer were used for simulating and analyzing systems. | |
| | Python / LAMMPS / / Tensorflow | |

5/2020
9/2021

Research assistant

Soft Materials Modelling Group of Maria Sammalkorpi, Aalto University

- Responsible for simulating all-atom and a mesoscale model system consisting of Dioctyl sodium sulfosuccinate surfactant in dodecane solvent.
- Atomistic scale molecular modelling was performed by Gromacs. Mesoscale molecular modelling was performed by a Large-scale Atomic/Molecular Massively Parallel Simulator (LAMMPS).
- Wrote Python scripts to create the model and results analysis methods. CSC super-computer were used for simulating and analyzing systems.
- Article of this study: dioctyl sodium sulfosuccinate surfactant self-assembly dependency of solvent hydrophilicity: a modelling study | DOI: 10.1039/D3CP02173D, (Paper) Phys. Chem. Chem. Phys., 2023, 25, 27250-27263
Python / LAMMPS / Gromacs / Tensorflow

Projects

Text summarization project

In this project I used Natural Language Processing (NLP) techniques to create text summarization. This text summarization application I used to help me summarize research articles for thesis.

Python / TensorFlow

Rental properties of top 10 largest cities in Finland

In this project I used web scraping technology to scrape the data of finnish rental properties from the website "vuokraovi.com" to create power BI dashboard of top 10 largest cities in Finland. From the power BI dashboard. one can sort apartments, for example by price, size, location, room number.

Python / Power BI

Traffic Sign Recognition using Convolutional Neural Networks

In this project I focused on the traffic sign recognition performance using three different convolutional neural network (CNN) architectures (LeNet, AlexNet, and VGGNet.). In this project I used both the German Traffic Sign Recognition Benchmark (GTSRB) dataset, and my own dataset that I created by taking pictures from different traffic signs in Helsinki region.

Python / TensorFlow

School project: MRI modality conversion tool

This group project is used convert brain MRI images from T1-weighted images to T2-weighted images, and vice versa. The used model is Conditional Generative Adversarial Net (cGAN). Trained model is capable of converting MRI images from one modality to another, and outputting completely syntethic images. My part was to create and train a working cGAN-model.

Python / TensorFlow

School project: Database for car repair shop

The goal of this project was to create a working SQL-database for car repair shop. To succeed in this project, there was a need to design UML and relationship diagram from which the tables were created. In addition there was added data to these tables and example SQL queries were performed.

SQL