Open Positions at the Department of Informatics (University of Oslo):

1 PhD Research Fellow and 1 Postdoctoral Research Fellow in Responsible Machine Learning for Sleep-related Respiratory Disorders

These positions are part of the RESPIRE project funded by the Research Council of Norway (https://www.mn.uio.no/ifi/english/research/projects/respire/index.html). RESPIRE is an interdisciplinary research project with partners in Medicine, Ethics, Law, and Computer Science The goal of RESPIRE is to develop machine learning (ML) solutions for sleep-related respiratory disorders that are (1) explainable to different users, including patients, health professionals, and ML developers, and (2) responsible with respect ethical and legal considerations.

Devices, like smart-watches, that can collect health data from "everybody" all the time, and machine learning (ML) to analyze this data will strongly impact future health solutions. They can enable low-cost large-scale screening and long-term monitoring of individuals to automatically detect changes in their health status, for early detection of undiagnosed diseases, and to personalize treatment of patients. If applied without reflection there are also substantial challenges, like (1) protection and control of use of collected data, (2) false alarms, health anxiety, overdiagnosis, subsequent overtreatment, and medicalization, (3) reliability, relevance, and validity of data analysis results, and (4) inability to explain results obtained with modern ML. This undermines basic ethical principles and legal rights and may hamper fruitful use of ML in the health sector.

The core of Respire will be a framework to define what good explanations are for different users (e.g., health professionals, patients, and ML developers), and how their quality can be evaluated. The main tasks of the positions at the Department of Informatics are as follows:

- Investigate recent consumer electronics for their use to monitor the sleep of young patients including infants.
- Develop ML solutions to analyze the sleep monitoring data from these devices.
- Contribute to the development of an explainability framework for the ML solutions in collaboration with project members of all involved scientific disciplines.
- Contribute to the development of a data warehouse solution for the data collected and analyzed in the project.
- Apply the explainability framework to evaluate the ML solutions.

More information about the positions and how to apply:

PhD position:
- Salary: NOK 482 200 – 526 000 per year depending on qualifications
- Application deadline: September 9th 2022
- Official announcement and how to apply: https://www.jobbnorge.no/en/available-jobs/job/205382/phd-research-fellow-in-data-stream-processing-and-privacy-protection

PostDoc position:
- Salary: NOK 544 400 – 626 300 per year depending on qualifications
- Application deadline: September 14th 2022
- Official announcement and how to apply: https://www.jobbnorge.no/en/available-jobs/job/231035/postdoctoral-research-fellow-in-responsible-machine-learning-for-sleep-related-respiratory-disorders

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