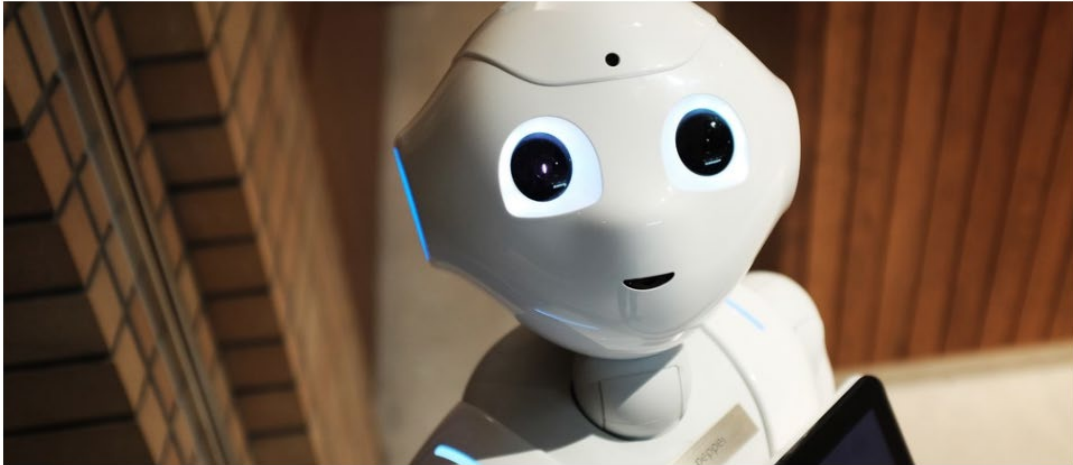


Teknologi for det grønne skiftet – et eksempel fra Trondheim

Bjørn Taale Sandberg
Forskningsdirektør
Telenor ASA

The global economy will be \$16 trillion bigger by 2030 thanks to AI



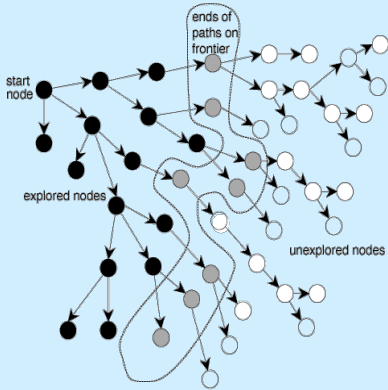
Who stands to gain the most from the march of the robots?

Image: Photo by Alex Knight on Unsplash

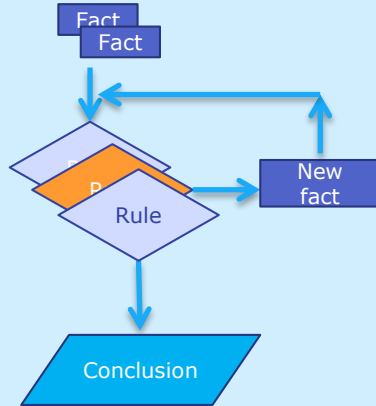


Knowledge Based

Search

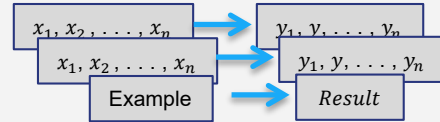


Expert Systems



Machine Learning

Learning Phase



Model

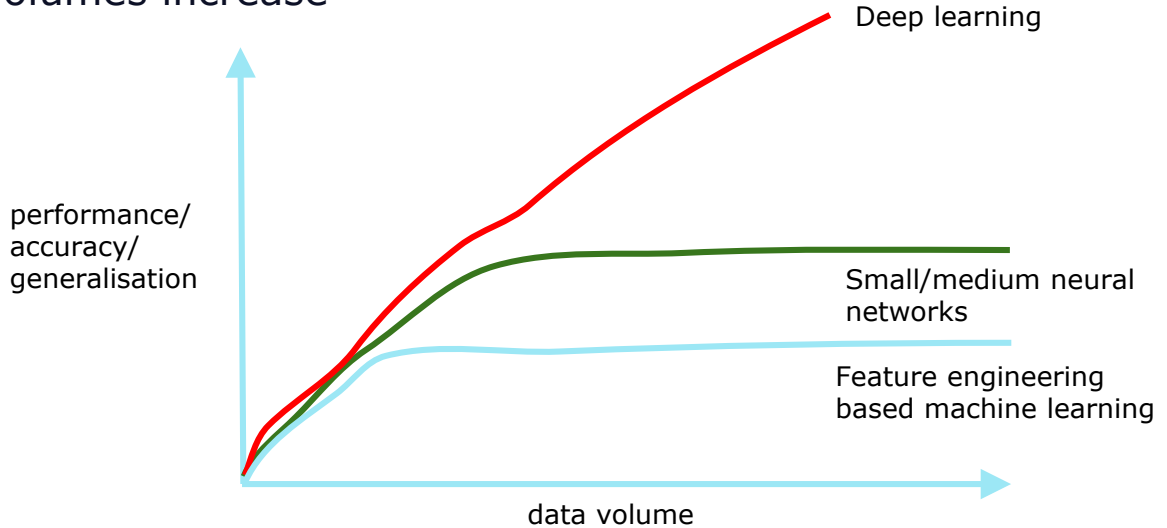
New Example

Hypothesis

Execution phase



Modern machine learning continue to improve as data volumes increase

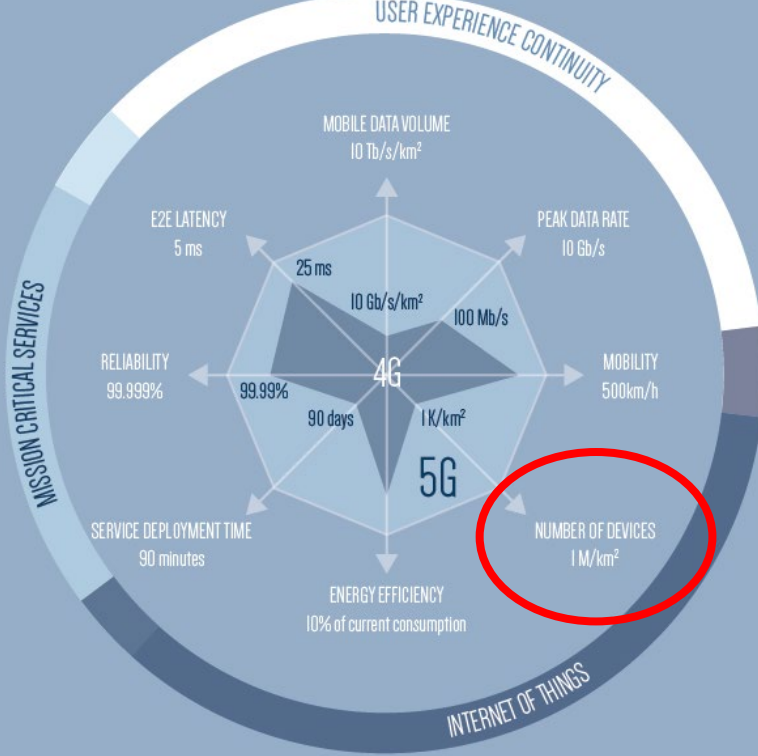


The background of the image is a close-up, high-angle shot of several blue printed circuit boards (PCBs) densely packed with electronic components. These components include various integrated circuits, capacitors, and resistors. Several multi-colored wires (red, yellow, green, blue) are connected to the boards, some using ribbon cable connectors. A semi-transparent grey rectangular box is centered over the image, containing the main title in white, bold, sans-serif font. In the bottom right corner, there is additional text in white, including a company name and a product identifier.

NEW IoT TECHNOLOGIES ARE ACCELERATING DATA COLLECTION

IoT - Internet of Things

ethernetics®
ENLT 102289
PENDING
828



THE PERFECT STORM

A circular image showing a large white industrial structure, possibly a ship's crane or a large container, with a small blue boat in the water below it. The text "IoT" is overlaid in white.

IoT

A circular image showing two firefighters in yellow gear and helmets working on a red aerial platform against a large fire with thick black smoke. The text "5G" is overlaid in white.

5G

A circular image showing a white humanoid robot with a blue logo on its chest, standing in a modern, brightly lit environment. A person is visible in the background. The text "AI" is overlaid in white.

AI

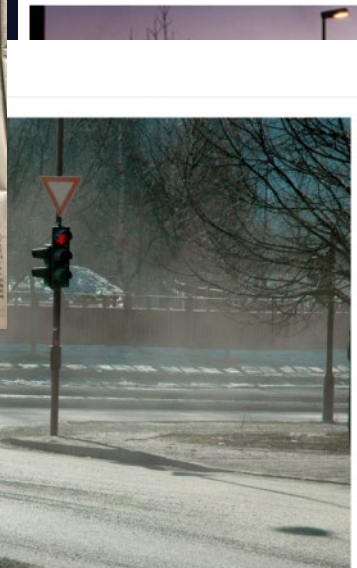
IoT MAKES TRONDHEIM SMARTER



TRONDHEIM
KOMMUNE



Dangerous air quality throughout much of Norway



Høy luftforurensning av svevestøv i Lillehammer

the Oslo rush hour. Photo: Håkon Mosvold Larsen / SCANPIX

IoT PIPELINE FOR AIR QUALITY



Air quality sensor
NB-IoT



LTE/4G
NB-IoT



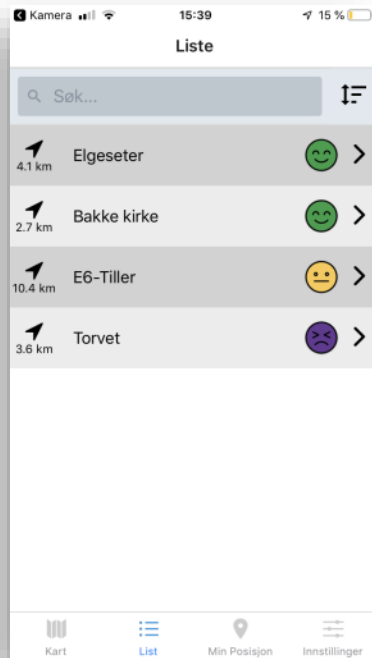
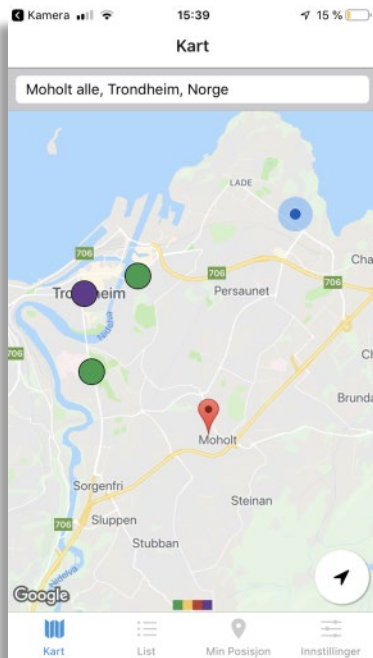
«Horde»
integration

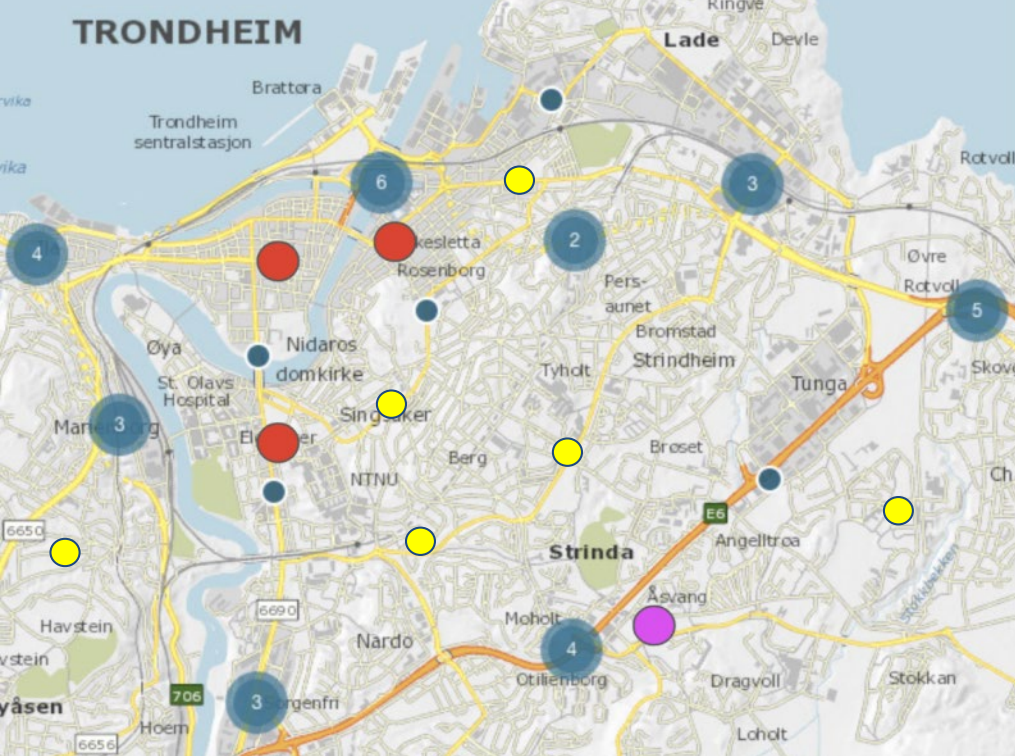


Data and analytics
platform



Application





Air quality measured
at fixed locations



Weather data



telenor



Air quality measured
by sensors (on cars)

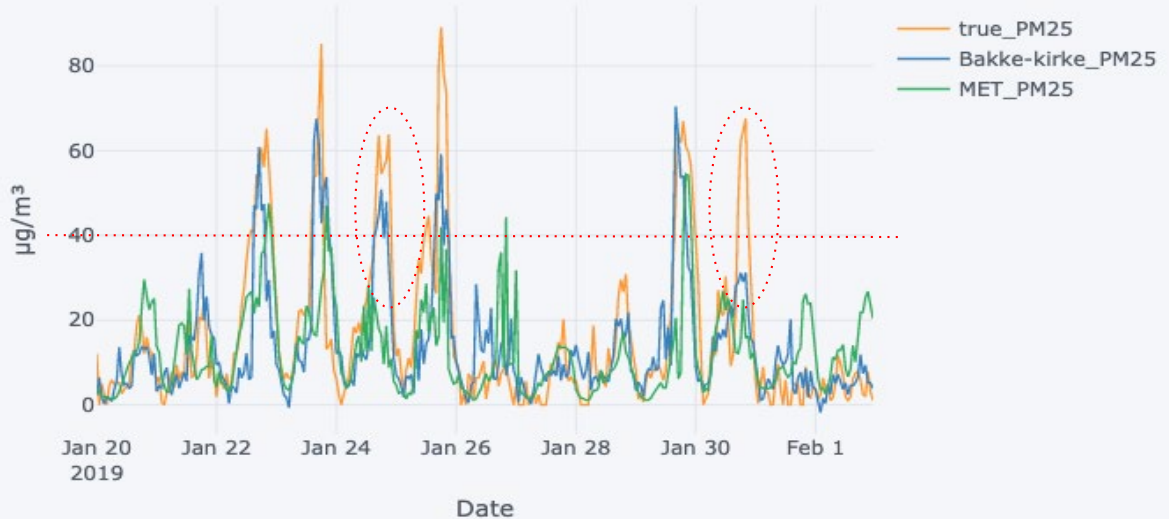


TRONDHEIM
KOMMUNE



Traffic data, fire ovens

PM25 at Bakke Kirke - 24 hours Predictions



Work done by Master student Andreas Jacobsen Lepperød



THANK YOU!