# Green Computing

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University of Bergen

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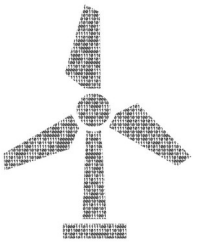
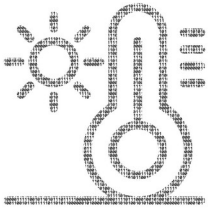
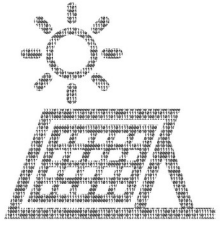
https://www.uib.no/en/energyinformatics

# Energy Informatics Lab

- Programming Technology
- Machine Learning
- Operations Research







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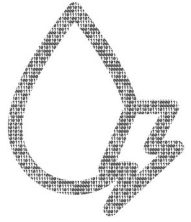
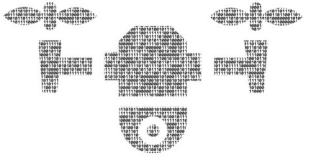


... ICT to address challenges related to sustainable energy production, distribution and saving



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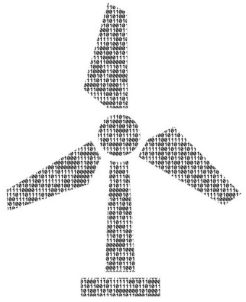
# **Green computing**: some criteria

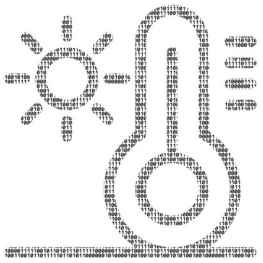
- Performance
  - 10MW for 6 weeks: any improvement will save costs
  - 10 000 FPGAs in a desert: 40W or 10W per unit
- Portability
  - Computer hardware is becoming more diverse: software update barrier
- Productivity
  - Shorten development costs from idea to application by a magnitude (and improve quality)
  - Programming model to fit problem being solved: flying drones in wind farms

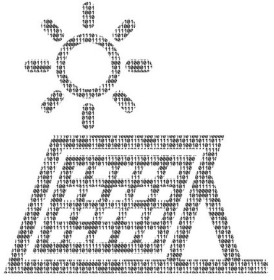
  +
- Exploit data

# Exploit data

- Underlying structure of the data
  - Sheaf theory
    - Coherent picture of diverse data for an area
  - More efficient machine learning







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