



## **Machine Learning Theme Workshop**

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# Who are we?



- N8 Research Partnership is the 8 most research intensive universities in the North of England – Durham, Lancaster, Leeds, Liverpool, Manchester, Newcastle, Sheffield and York
- N8 Centre of Excellence for Computationally Intensive Research (N8 CIR)
  - Derived from N8 HPC which offered access to a shared compute platform for all 8 universities for 6 years.
  - Established to build on this partnership to expand the *art of the possible* within research themes by leveraging computational- and data-intensive practice.



## N8 CIR Aims

- Develop skills across the partner organisations
- Develop shared software
- Facilitate access to computational resources
- Leverage funding for computationally intensive research
- Help “non-traditional” users access computational resources
- Accelerate research!

## Themes

- Machine Learning
- Digital Health
- Digital Humanities
- Research Software Engineers
- Research Infrastructure Engineers



# Practitioner-led approach

- Important not to re-invent the wheel – leverage what is already out there.
- Provide signposting & mechanism to share resources.
- Inspire researchers to embrace new methods through practitioner-led activity
  - Provide forums for researchers to highlight their computational methods.
    - Online researcher showcase videos
    - Workshops and facilitated discussion
  - Capture domain-specific examples to enhance existing material.
- Coordinate initiatives to train the trainer
- Help bring training available outside of the region, into the region

# Bede – Tier 2 HPC



- Tier 2 supercomputer delivered in early 2020
- Comprised of 32 IBM Power 9 dual-CPU nodes, each with 4 NVIDIA V100 GPUs and high performance interconnect <https://n8cir.org.uk/supporting-research/facilities/bede/hardware/>
- Ideal for Machine Learning
- All N8 researchers can apply for access to Bede
- Research Software Engineer support available at each institution to help you get started
- For more information and to apply - <https://n8cir.org.uk/supporting-research/facilities/bede/>

# Machine Learning Theme Launch



## Nominated Theme Lead at your institution

- Prof Dan Watts, Dept of Physics, Research Champion - Technologies for the future

## Purpose of these workshops

- Build an active theme in Machine Learning across N8
- To identify common challenges in the uptake and use of Machine Learning across N8 institutions
- Develop knowledge exchange, exchange of best practice and provide upskilling for researchers in the area of Machine Learning

## What happens next?

- Feedback will be gathered from all 8 institutions
- A draft roadmap will be created and then sent to the theme leads for comments and approval
- A Machine Learning roadmap will be presented to the N8 Strategic Executive Group (SEG) in March

# Questions!

## 1. Hardware

Do you have access to appropriate hardware to carry out Machine Learning (ML)?

- If not what hardware would you like to see made available?

If you have access to suitable hardware, is it set up appropriately?

- If not what needs to change?

## 2. Data

Do you feel you have the skills required to handle the data for ML?

Are the relevant data sets available?

- If so are they suitable for use in ML?

# Questions!

## 3. Training

Do you feel you could benefit from training in ML techniques?

- If so what topics / skills would be of interest?

Would you benefit from case studies of the application of ML within your research area?

- If so what areas should we cover?

## 4. Community Building Across N8

What sort of activities would you like to see take place?

- Show and tells, vendor technology updates, working groups in specific areas or topics?

## 5. Anything else!

What other barriers are there to your ML-based research?

- Software?



# Keep In Touch



- Website – <https://n8cir.org.uk/>
- Bede - <https://n8cir.org.uk/bede/>
- Twitter - @N8CIR
- Join our mailing list at <https://n8cir.org.uk/contact/>

