

EMiT Emerging Tech

Michael Bane
HIGH END COMPUTE LTD

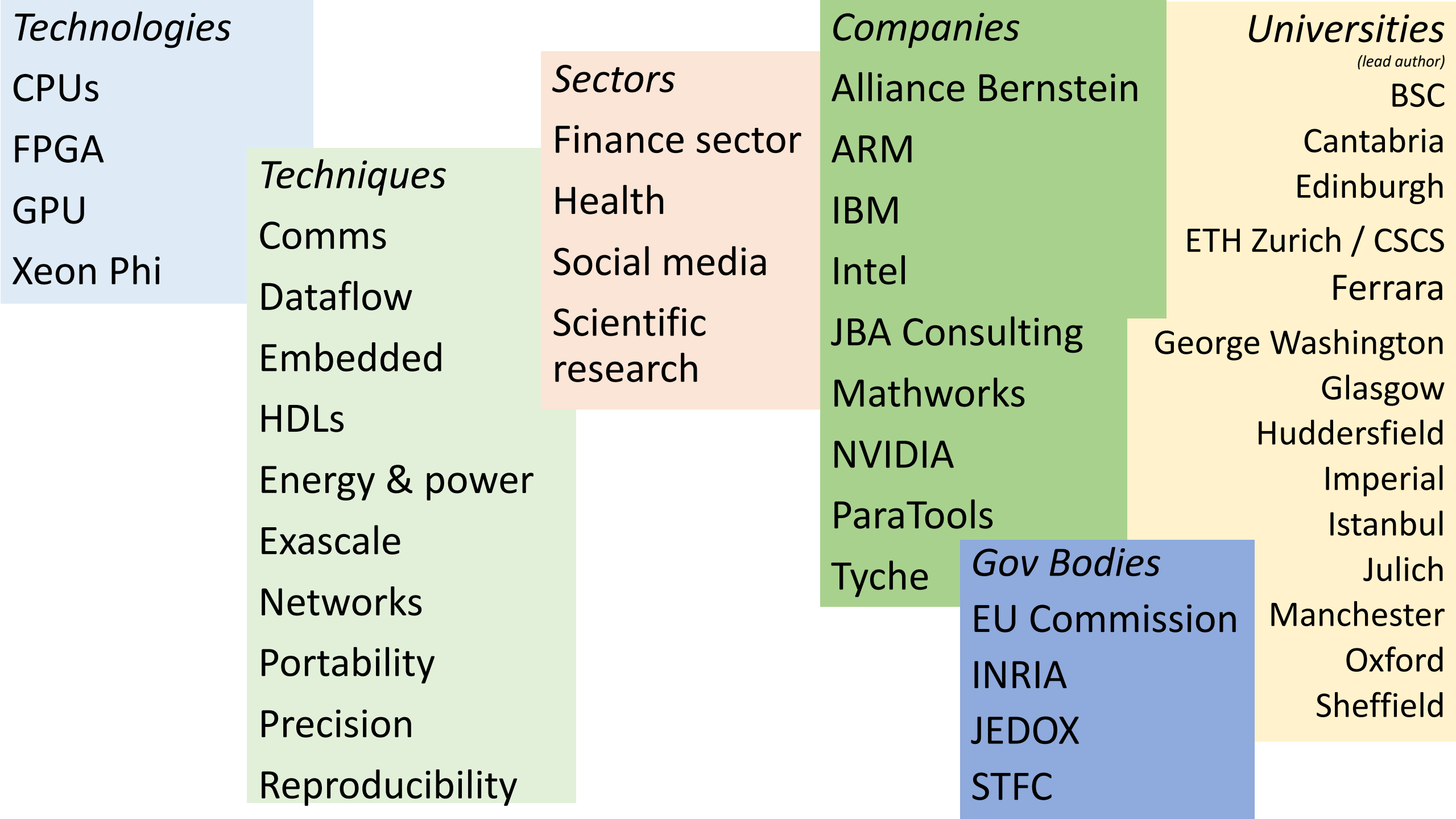
Emergence of EMiT

- Researchers + IT support looking at new approaches for improved compute & data
- 2014 Manchester (1 day)
- 2015 Manchester (2 days)
- 2016 Barcelona (2 days)
- 2017 @CIUK

- ✓ Device-independent Compilers and High Level Languages
- ✓ Low Power and Energy Efficient Computing
- ✓ Advances in Novel Hardware
- ✓ Novel algorithmic design
- ✓ New domain applications of Emerging Tech

- Small committee, dedicated folks
Stephen Longshaw, Dave Topping,
Ben Rogers, Javier Navaridas,
Violeta Holmes, Irfan Alibay
Jack Dongarra, Kirk Jordan
BSC: Filippo & Renata





Why...??

- Not just upping the clock speed
 - What will be the actual effect of different architectures work for different domains
 - What algorithmic developments from other fields could actually help elsewhere?
- Ground-truth vendor-speak
 - Share opportunities to best use new tech, share solutions to common barriers
- Not just new technologies
 - But new techniques too
- With a view to enhanced & appropriate take up of new tech
 - By researchers and by businesses

EMiT Next Steps

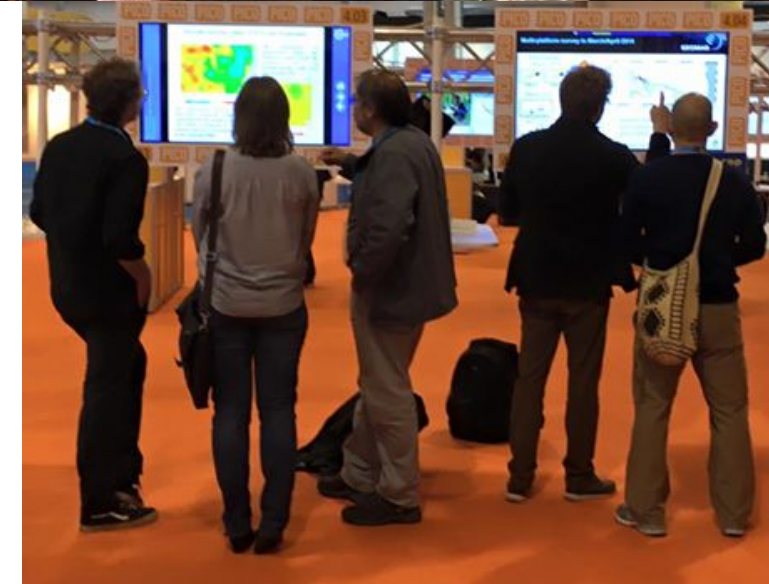
European Geosciences Union (EGU)

- Annual conference, ~3000 people
- "PICO" session on use of Emerging Computational Technology
 - Short oral presentation *plus*
 - Interactive screens / electronic posters
- Abstracts by 10 Jan 2018
- <http://meetingorganizer.copernicus.org/EGU2018/session/28668>
- EGU: <https://egu2018.eu>

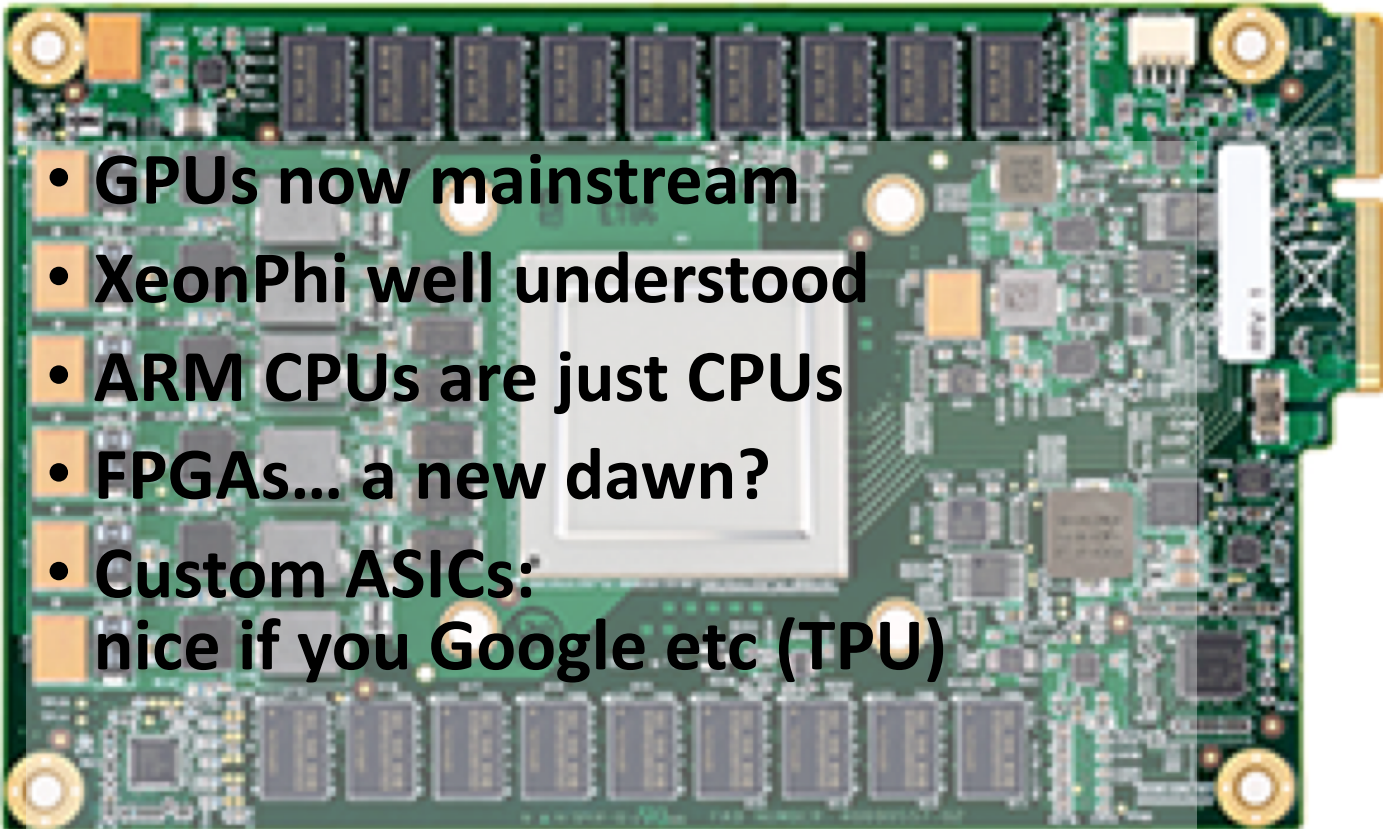
LOOKING FOR HOST FOR OUR NEXT 2-DAY CONFERENCE

Interact!

- LinkedIn Group
- Online forum: <https://emit.tech>



Tomorrow's Horizon?

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- GPUs now mainstream
 - XeonPhi well understood
 - ARM CPUs are just CPUs
 - FPGAs... a new dawn?
 - Custom ASICs:
nice if you Google etc (TPU)



What next?

- Bio compute?
- Optical accelerators?
- ML / DL / AI
- Quantum computing?
- The ball computer?

... & how can it *help* us?