

NERC Training

Dr. David Topping, NCAS & The University of Manchester

Dr. Michael K. Bane, High End Compute

michael bane

Who am I?

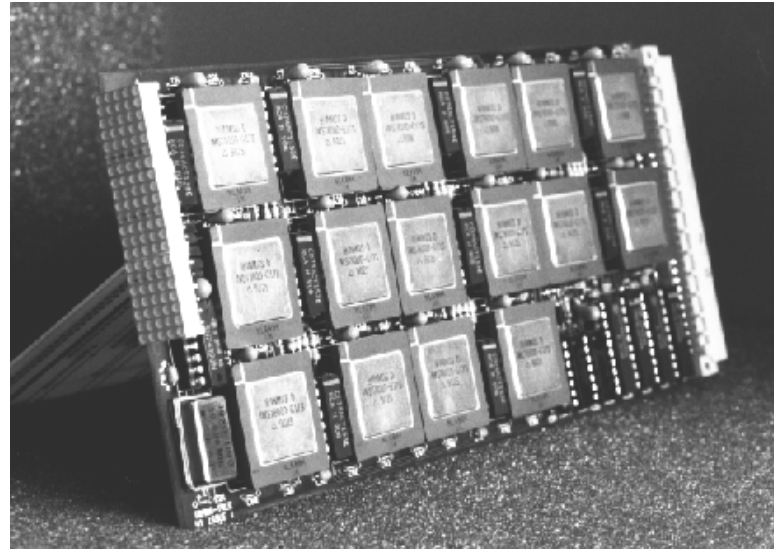
- My first computer
 - VIC 20



<https://aydinstone.wordpress.com/tag/commodore-vic-20/>

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 - INMOS Transputer



<http://www.brunel.ac.uk/~eesttti/papers/main.html>

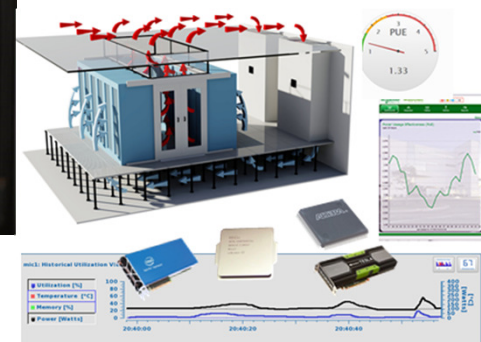
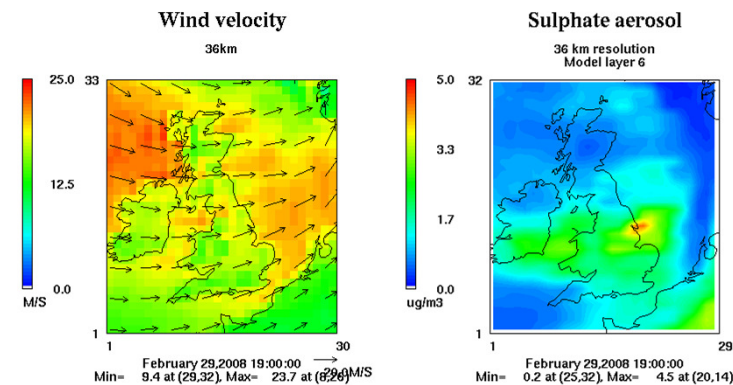
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- My first super computer
 - Cray T3E



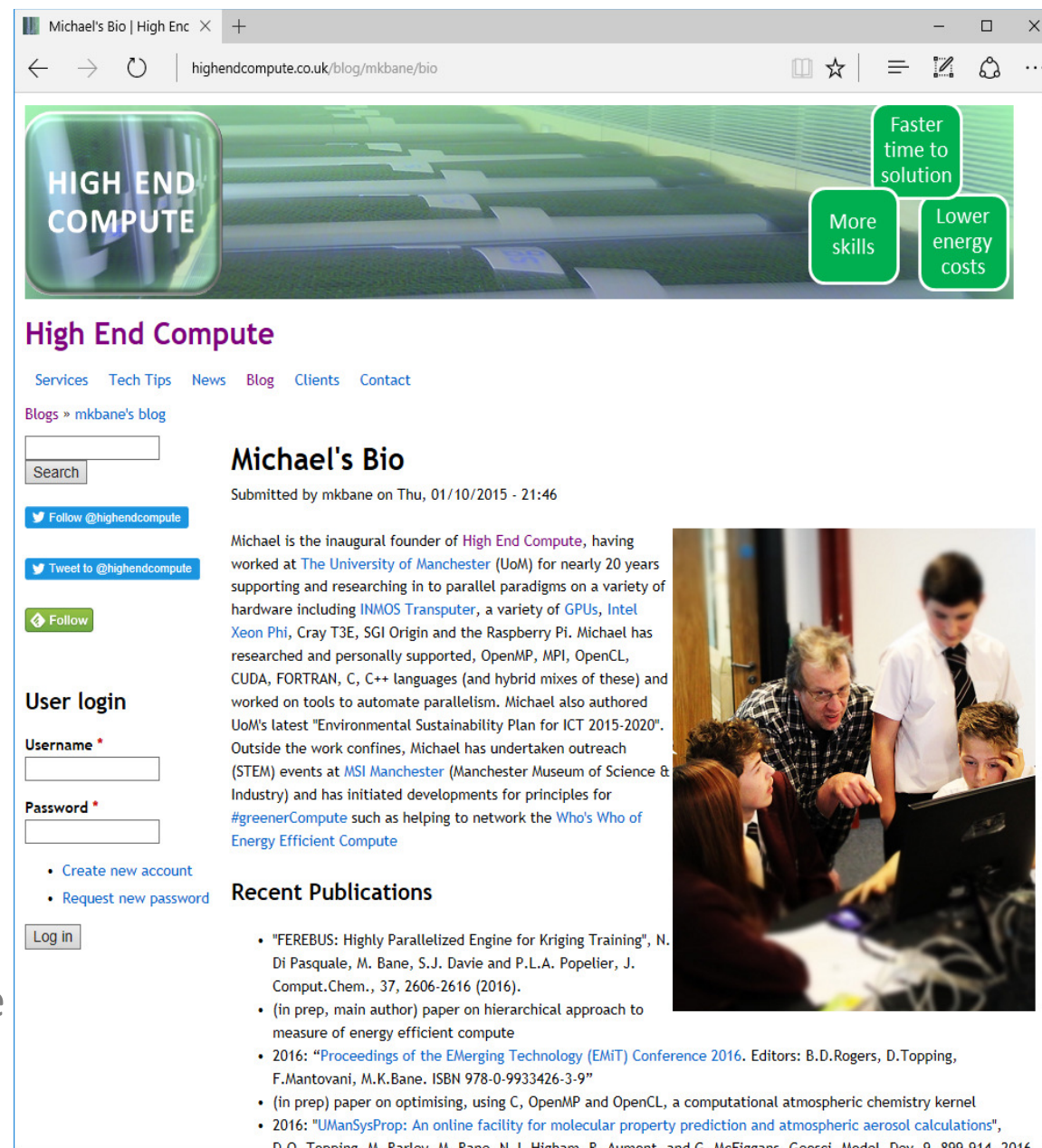
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- Jobs
 - Supporting HPC
 - Modelling chemical weather
 - Manager: Research Apps
 - Energy Efficient Compute



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- HEC Consultancy
<http://highendcompute.co.uk>



The screenshot shows a web browser window with the URL highendcompute.co.uk/blog/mkbane/bio. The page features a header with the 'HIGH END COMPUTE' logo and three green callout boxes: 'Faster time to solution', 'More skills', and 'Lower energy costs'. Below the header is a navigation bar with links: Services, Tech Tips, News, Blog, Clients, and Contact. The main content area is titled 'High End Compute' and includes a search bar, social media links (Follow @highendcompute, Tweet to @highendcompute, and a Follow button), and a 'User login' section with fields for Username and Password, and a Log in button. The 'Michael's Bio' section, submitted by mkbane on Thu, 01/10/2015 - 21:46, describes Michael as the inaugural founder of High End Compute, having worked at The University of Manchester (UoM) for nearly 20 years. It lists his research interests in parallel paradigms, hardware (INMOS Transputer, GPUs, Intel Xeon Phi, Cray T3E, SGI Origin, Raspberry Pi), and languages (OpenMP, MPI, OpenCL, CUDA, FORTRAN, C, C++). It also mentions his outreach work at MSI Manchester and his involvement in the #greenerCompute initiative. To the right of the bio is a photograph of Michael and three students looking at a laptop. Below the bio is a 'Recent Publications' section listing several papers, including 'FEREBUS: Highly Parallelized Engine for Kriging Training' and 'Proceedings of the EMIT Conference 2016'.

Michael's Bio

Submitted by mkbane on Thu, 01/10/2015 - 21:46

Michael is the inaugural founder of **High End Compute**, having worked at **The University of Manchester** (UoM) for nearly 20 years supporting and researching in to parallel paradigms on a variety of hardware including **INMOS Transputer**, a variety of **GPUs**, **Intel Xeon Phi**, Cray T3E, SGI Origin and the Raspberry Pi. Michael has researched and personally supported, OpenMP, MPI, OpenCL, CUDA, FORTRAN, C, C++ languages (and hybrid mixes of these) and worked on tools to automate parallelism. Michael also authored UoM's latest "Environmental Sustainability Plan for ICT 2015-2020". Outside the work confines, Michael has undertaken outreach (STEM) events at **MSI Manchester** (Manchester Museum of Science & Industry) and has initiated developments for principles for **#greenerCompute** such as helping to network the **Who's Who of Energy Efficient Compute**

Recent Publications

- "FEREBUS: Highly Parallelized Engine for Kriging Training", N. Di Pasquale, M. Bane, S.J. Davie and P.L.A. Popelier, J. Comput.Chem., 37, 2606-2616 (2016).
- (in prep, main author) paper on hierarchical approach to measure of energy efficient compute
- 2016: "**Proceedings of the EMIT Conference 2016**". Editors: B.D.Rogers, D.Topping, F.Mantovani, M.K.Bane. ISBN 978-0-9933426-3-9"
- (in prep) paper on optimising, using C, OpenMP and OpenCL, a computational atmospheric chemistry kernel
- 2016: "**UManSysProp: An online facility for molecular property prediction and atmospheric aerosol calculations**", D.O. Topping, M. Barlev, M. Bane, N.J.I. Hieham, B. Aumont, and G. McFiggans. Geosci. Model. Dev. 9, 899-914. 2016

Course Outline

Outline of course

- Introduction to parallelism
 - Languages, but also hardware
- Introduction to performance analysis
- Lots of hands on
 - VM & provided laptop
 - Access to "Archer"