IT Future of Medicine
ICT platform
IT Future of Medicine

Content

• Challenges
• Solutions
• Core ICT partners
• ICT Industry involvement
• Computation overload, Data storage overload (induced model as store)
• Meaning versus data-richness; Components do not fit
• Multiscale; Heterogeneous data
• No common language (what is the best lingua franca?)
• Model driven experimental design
• Multilingual data mining. Semantic web
• Quality control (improved by distributed responsibility?)
• Best parallelization (one processor per organ?)
• Central or distributed computing; Parallel computers or GRID or cloud?
• (Quality control, data security); Code and data security
• Dedicated core processors
• Adapting core processors (aging with the person?)
The Future of Personalised Medicine rests upon the realisation and exploitation of fundamental research advances in computational science.

ITFoM has in place a dynamic research consortium comprised of:

1. World leading pan-European university research base in Computational Sciences.
2. The research laboratories and development facilities of key world leading multi-national IT companies.

*ITFoM is uniquely placed to motivate, coordinate, undertake and make these research advances as well as successfully exploit them in making personalised medicine a future reality.*
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24 Partners

- Max Plank Institut for Molecular Genetics
- Medical University Graz
- University College London
- Free University of Amsterdam
- University of Manchester
- Maastricht University
- EMBL
- Wellcome Trust Sanger Institute
- Kungliga Tekniska högskolan
- Imperial College London
- CIRMMP
- International Prevention Research Institute

- Uppsala University
- University of Luxembourg
- University of Leicester
- HARVARD Medical School
- University of Auckland
- Universite de Geneve
- Centro Nacional De Análisis Genómico
- Siemens
- Alacris Theranosics GmbH
- Charite Universitätsmedizin Berlin
- Illumina
- Commissariat a l'energie atomique et aux energies alternatives

fet11 The European Future Technologies Conference and Exhibition
4-6 May 2011 Budapest, Hungary
Science beyond fiction
University College London (UCL)

Word Leading Centre for Computational Science Research
Unique Central European Hub for Computational Statistics and Machine Learning
UCL is Coordination Centre for EU FP7 Network of Excellence PASCAL2

Fields/Technologies covered:
Statistical Machine Learning, Probabilistic Modelling and Inference
Computational Statistics, Software Systems Engineering
Network Architecture and Evolution, Information Security
Media Futures, Information Retrieval
IT Future of Medicine

4th – 6th May 2011

FET Flagships

Siemens

IBM

Intel

Xerox Research Centre Europe

Oracle

Microsoft Research

COSBi

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Science beyond fiction
Theoretical computer science and language development; Computational tools for large scale Systems Biology

Development of new machine learning and mechanism design techniques, to leverage the large mass of data often available from both the service context and usage
Integration of large scale legacy systems with novel system architectures; Future systems and network architecture development

Novel high performance computing and processing paradigms; Future generation processor architectures - beyond vectorised GPU

Multi-Peta Scale Data Storage and retrieval
IT Future of Medicine

Future Database technologies
The project outcomes will enable the prediction of health, disease, therapy and its effects for individual patients and through application in the clinic will change the future of medicine.

For more information:
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