1st Workshop on High-Performance Computing in Neuroscience

National Brain Mapping Labratory

May 2019

Computation in NBML

- Where we were
  - Need to national high-tech computational equipment
  - Need to development of computational approach in brain studies

Computation in NBML

- Where we are
  - Setting up two computational server
    - 256 logical core(2 server x 4 socket x 16 physical core x 2 threat)
    - 256 gigabyte RAM
    - 18 terabyte storage
    - RAID 5 for redundant array of independent disks configuration
    - Dedicated configuration
    - Powerful last version of multitask and multiuser operating systems
    - Access to servers from Ethernet and Internet
    - The most useful software which a computational neuroscientist may need such as:
      - MATLAB, python, R, FSL, Freesurfer, SPM, AFNI, ANTS, Brian, Neuron, …
    - Preparation of automatic parallel processing pipelines

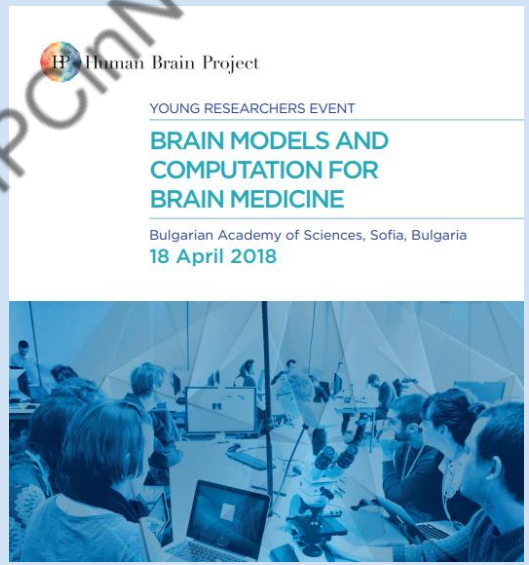
Computation in NBML

- Where we will go
  - Technical developments and maintenance
  - Promotions
    - Organizing workshops and seminars
    - Organizing computational competitions
    - Establishing forums
  - Production
    - Pre-processed neuroimaging data
    - Extracted activity pattern of functional images
    - Educational media

High-Performance Computing(HPC)

High Performance Computing most generally refers to the practice of aggregating **computing** power in a way that delivers much **higher performance** than one could get out of a typical desktop **computer** or workstation in order to solve large problems in science, engineering, or business.(https://insidehpc.com)

High-Performance Computing in Neuroscience



Division High Performance Computing in Neuroscience

Head of the division High Performance Computing in Neuroscience

Dr. Boris Orth
Phone: +49 2461 61-9123
Fax: +49 2461 61-6656
email: b.orth@fz-juelich.de

1st High-Performance Computing in Neuroscience Workshop

Dr. Alireza Vafaei

Institute for Research in Fundamental Sciences(IPM)

Dr. Reza Kherad-Pisheh

Shahid Beheshti University

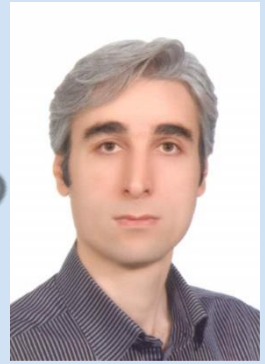
Dr. Sara Aghvami

University of Tehran

Dr. Reza Khorowabadi

Shahid Beheshti Unversity

Acknowledgment



Dr. Hossein Ghadiri

Hesam Kharazi

Dr. Hossein-zadeh

and NBML staff

Thanks
Have a great day!