Brief report on

AstroInformatics & Astrosemantics 2012

IVOA interoperability meeting
Sao Paulo 2012 October 25

AstroInformatics 2012

- http://www.astro.caltech.edu/ai12
- Hosted by MS Research

AstroInformatics2012
Redmond, WA, September 10 - 14, 2012

Big Data

- MS SQL Azure Labs
- MapReduce algorithms
- MS (& Amazon) cloud & datacenters
- Globus Online : moving large data volumes
- SkyTree
- CANFAR at CADC

Future technologies

- GPUs for floating point operations
- SSD for random I/O access
- Hadoop, NoSQL, sciDB
- Make use of Moore & Kryder's laws

From VO to AI

- Data discovery in the VO more or less achieved
- Need for scalability
- Astronomers must get involved

SDSS success story

- SkyServer usage
- 194 million SQL queries in 10 years
- Usage in other domains
  - Pan Starrs
  - JHU Onco Space
- MyDB for data publication

Immersive multi-dim visu

- Macroscope
- Asymptomia = leap motion + oculus rift
- DAME & DAMEWARE

WWT

- Visualisation of complex datasets
    - Earthquakes
    - Crimes in communities
- Customized tours
- Application to planetarium
    - Demo in Washington U planetarium with 6 beamers in dome
    - Use of special hardware for control

Impact and dissemination

- Impact factor for publishing data
- Impact factor for arXiv ?
  - Learn from Gene community «Total Impact »
- Citations of datasets
- Dissemination of AI within community
- Is traditional scientific publishing dead ?

AstroSemantics

- Matthew Graham
  - Machine-processible knowledge
  - Triple store DN can be fastest knowledge repository

- Norman Gray
  - Pleading for unified astronomy thesaurus

- Sébastien Derriere
  - Smart CDS portal

- Ashish Mahabal
  - Connecting Bayesian networks and semantics