

madrid institute
for advances studies

institute
imdea networks

Developing the Science of Networks

Institute IMDEA Networks and its Research (Assistants)

Sergey Gorinsky

Science Week

19 November 2010

The Institute at a Glance

- ▶ Research organization of a new kind
 - promoted by Madrid regional government
 - with extra support from public and private sources
 - research assistants, unlike industry research
 - teaching optional, unlike academia
 - focus on cutting-edge research in computer networking
- ▶ International profile
 - English as the only official language
 - growing multinational team
 - annual prominent long-term visitors from other countries

Research Areas



Network Protocols
and Algorithms



Wireless-Based
Networking



Energy-Efficient
Networking

Research Team before 2009



Arturo, Director

Nick and Marco, part-time Chief Researchers



José Félix, Senior Researcher

Iljitsch, Paul, Alex, Marco, and Michal, Research Assistants

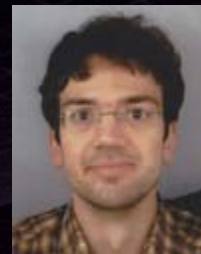


Research Team Additions in 2009

Albert, Deputy Director



Gianluca and Balaji, Staff Researchers



Sergey, Senior Researcher



Syed, Andra, Pradeep, and Kshitiz, Research Assistants



Research Team Additions in 2010

Joerg and Antonio, Senior Researchers



Rade and Vincenzo, Staff Researchers

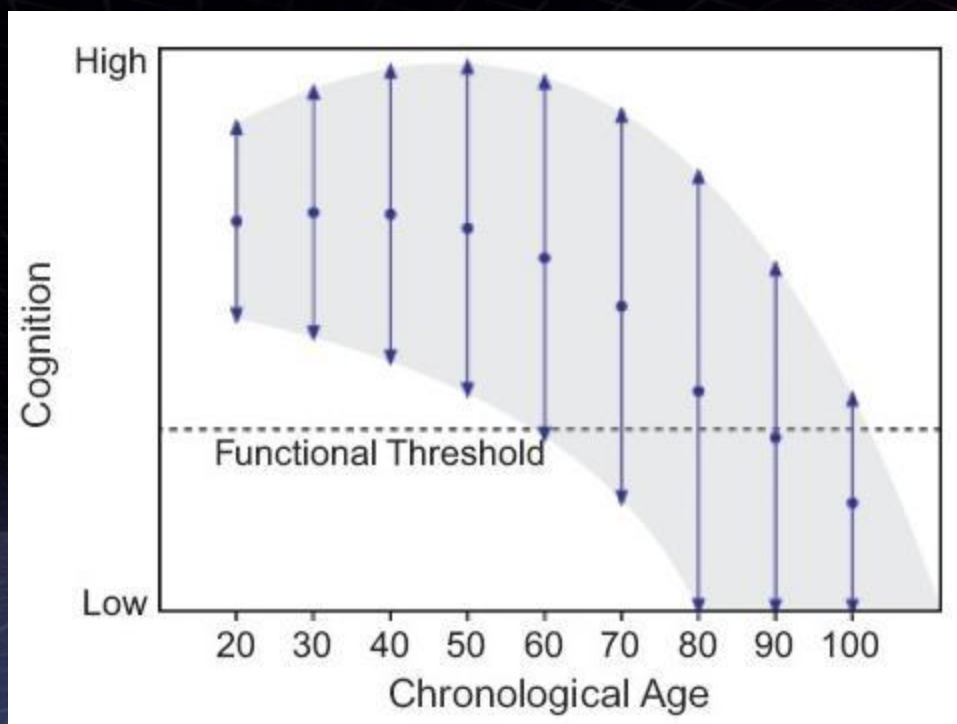


Andrea, Ali, Ignacio, Syed, Jordi, Lucas, Isabel, Camilo, Pablo, and Fabio, RAs



Role of Research Assistants

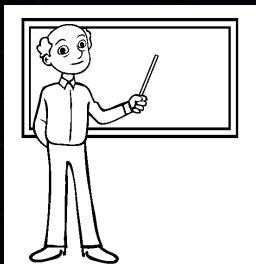
- ▶ Main engine of our research activities
- ▶ Best age to make a scientific impact



(Source: www.willatworklearning.com)

Who is a Researcher?

Theorist?



Engineer?



Programmer?



Different researchers
have different sets of
research skills

(Sources: thecolor.com and one-huge-family.com)

How Knowledge Grows

Research:

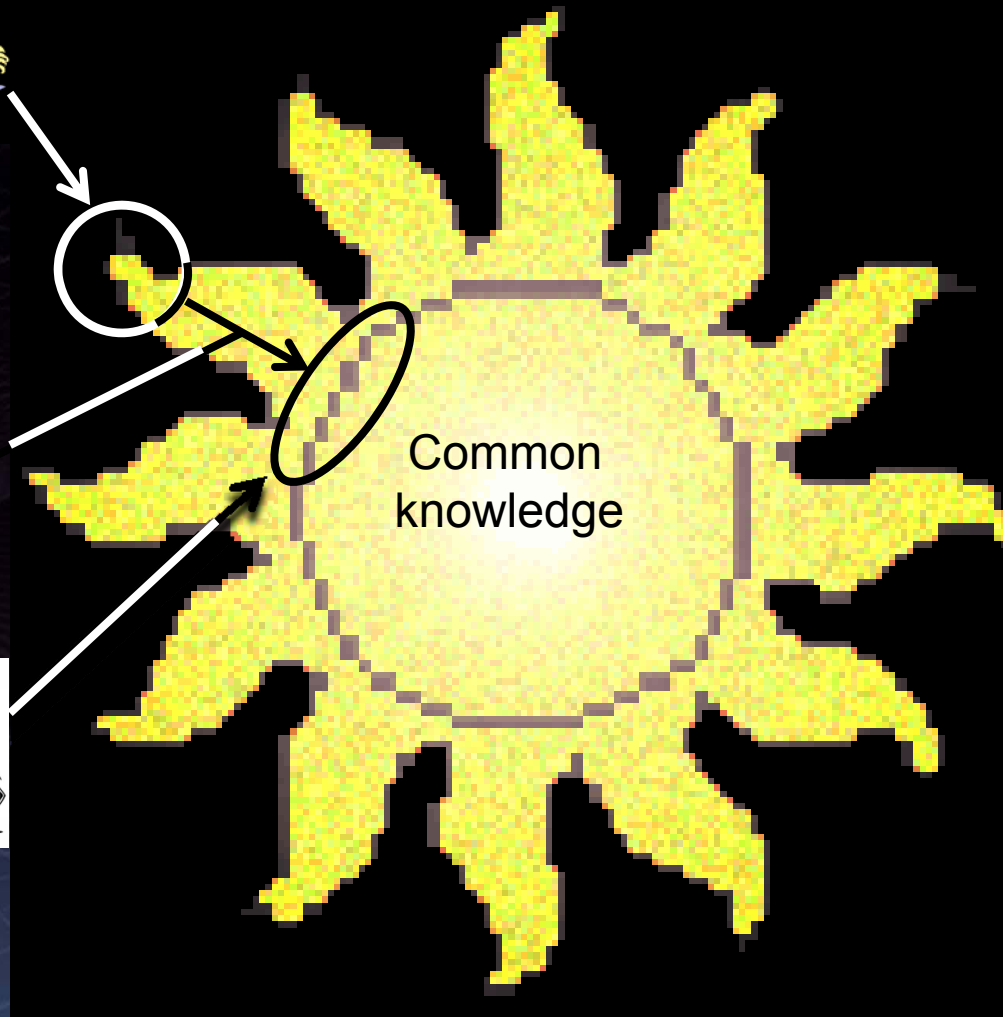
- theoretical analysis
- simulations
- prototype experiments



Technology transfer



Industry development



(Sources: expanding.ca and istockphoto.com)

Research Expectations

- ▶ New high-impact ideas
 - not implementation of existing ideas
- ▶ Ability to communicate effectively
- ▶ Publications in top-level research venues
 - SIGCOMM, INFOCOM, ICNP, SIGMETRICS, CONEXT, MOBICOM, NSDI, IEEE/ACM Transactions on Networking, JSAC
- ▶ Result dissemination throughout the world
- ▶ Support to and from colleagues
- ▶ Productive rewarding life-long career as a researcher

Research Assistant's First Year

- ▶ Acquire skills needed for the research
 - theoretical analysis, simulations, prototyping
- ▶ Write and submit the first research article
- ▶ Prove own academic qualifications
 - earn passing grades in the second-year courses of the UC3M Master's program in Telematics Engineering
 - write and defend the Master's Thesis (aforementioned article)
 - put the highest priority on the research, rather than the courses

Research Assistant's Second Year

- ▶ Publish the first article in an internationally recognized conference or workshop

- Pradeep



P. Bangera and S. Gorinsky, “Impact of Prefix Hijacking on Payments of Providers”, Proceedings of COMSNETS 2011, January 2011

Research Assistant's Third Year

▶ Publish the first article in a top-level research venue

- Michal



R.Cuevas, M. Kryczka, A. Cuevas, S. Kaune, C. Guerrero and R. Rejaie, "Is Content Publishing in BitTorrent Altruistic or Profit Driven?", Proceedings of ACM CoNEXT 2010, December 2010

Research Assistant's Fourth Year

- ▶ Publish the second article in a top-level research venue
- ▶ Find oneself a new position to become an independent researcher
- ▶ Write and defend the doctoral dissertation