NITRD 30th Anniversary Symposium
MAY 25, 2022

INTERNATIONAL SPY MUSEUM (AND VIA LIVESTREAM)
700 L'ENFANT PLAZA SW, WASHINGTON, DC 20024
HTTPS://WWW.NITRD.GOV/30TH-ANNIVERSARY-OF-THE-NITRD-PROGRAM/

Agenda

9:00   Doors Open and Registration

9:15   Welcome and Introductions

- NITRD's 30th Anniversary Video
- Kamie Roberts (NITRD) - Welcome
- Alondra Nelson (OSTP) - Opening Remarks
- Sethuraman ("Panch") Panchanathan (NSF) - Welcome Video
- Kamie Roberts - Opening Remarks
- Elizabeth ("Liz") Bradley (UCB) - Introduction of the Computing Community Consortium & the Organizing Committee for NITRD's 30th Anniversary

9:45   Panel 1 - Computing at Scale

- Luiz André Barroso (Google), Ian Foster (Argonne NL), Timothy Pinkston (USC), and Kathy Yelick (UCB)
- Moderated by Ben Zorn (Microsoft)

As our lives become increasingly digital, cloud and HPC computing has transformed the way we interact, do business, do science, and entertain ourselves. Research investments in building distributed systems at scale, from algorithms, to networking, to operating systems, have enabled computation at a scale that was unimaginable 30 years ago. This rapid transformation creates unbounded opportunities but also raises new challenges to individual's privacy, cybersecurity, and impacts on the social fabric of society. In this session, we celebrate the incredible achievements of HPC and cloud computing and consider the path forward.

10:45   BREAK

11:15   Panel 2 - Networking and Security

- Deborah Frincke (Sandia NL), Jim Kurose (UMA), and Chris Ramming (VMware)

- Moderated by Bob Bonneau (OSD/DoD)

Over the past few decades, the Internet and mobile phones have transformed the world. The underlying fixed and wireless networking infrastructure is being evolved by shifting and implementing more functionality in software. However, the software-enabled flexibility comes at a greater risk of security vulnerabilities. Given the critical importance of networking infrastructures around the globe, the security and trustworthiness of these networks is of paramount importance. This panel will look at the remarkable achievements in networking and discuss the key challenges and paths forward in securing this critical infrastructure.

12:15   **Poster Session**

12:45   **LUNCH**

1:45   **Poster Session**

2:05   **Barbara McQuiston**, Director of Defense Research and Engineering for
        Research and Technology, DoD

2:15   **Panel 3 - Artificial Intelligence/Machine Learning**

- Charles Isbell (Georgia Tech), Chad Jenkins (UM), Talitha Washington (CAU), and Patti Ordóñez Franco (UPRRP)
- Moderated by Liz Bradley (UCB)

Advances in artificial intelligence and robotics have transformed all of science and engineering and nearly every sector of our economy. This panel will characterize seminal federally-funded advances over the last three decades leading to today's AI/robotics revolution, along with the challenges of fairness and trustworthiness that society faces in the years ahead.

3:15   **BREAK**

3:45   **Panel 4 - Privacy and Internet of Things**

- Ed Felten (Princeton), Marc Groman (Groman Consulting), Katerina Megas (NIST), and Sunoo Park (Cornell)
- Moderated by Charles ("Chuck") Romine (NIST)

Large-scale data analytics is enabling profound advances and new benefits in areas such as medicine, engineering, transportation, and agriculture. Preventing adverse privacy effects arising from such information processing is one of the great challenges of the digital age. The Internet of Things (IoT), a new domain of interconnected sensors, devices, and

actuators, has the potential to further exacerbate negative impacts on privacy, as a myriad of sensing devices collect data and are combined into monitoring, tracking, and control systems in sectors such as healthcare, transportation, home and urban automation, and law enforcement. This panel will discuss the competing challenges of data use and privacy, and outline research goals to advance the technical, social, and policy solutions.

4:45   **Technology & Society Video: Socially Responsible Computing**

- Joydip Kundu (NSF)

4:50   **Panel 5 - How Technology Can Benefit Society: Broadening Perspectives in Fundamental Research**

- Janet Abbate (Virginia Tech), Deborah Estrin (Cornell), Charles Isbell (Georgia Tech), and Ramayya Krishnan (CMU)
- Moderated by Alondra Nelson (OSTP)

While breakthroughs in networking and information technology supported by the NITRD program over the last three decades have had profoundly positive impacts on our society, we have also borne witness to the negative and oftentimes unintended consequences of such advances. For example, in recent years, innovations in generative adversarial networks have served to advance our understanding in fields as diverse as astrophysics and biology, they have also been the basis for the production of fake photographs and videos, threatening information integrity. Given the ubiquity of information technology research outputs in our daily lives, understanding how to "design in" ethical principles and responsible practices – and how to ensure a diversity of thought and perspectives in the design formulation – is increasingly critical. This panel will focus in on this aspect of the NITRD research space.

5:50   **Thank You and Wrap Up**

- Erwin Gianchandani (NSF)

6:00   **Reception**

7:00   **Networking in the Museum**