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what if?

Participant Guide

Future Internet Summit
Waterview Center, Arlington VA
October 12-15 2009

Aaron Falk GENI Project Office / BBN Technologies

Aaron Falk GENI Project Office / BBN Technologies

What key words or phrases would you use to describe your research

research infrastructure, virtualization

Challenges

A future Internet architecture needs to be better than what we have today, has a feature set that permits future innovation, incentives that encourage growth, and balances the interests of the user with economic, political, and operational stakeholders.

What are the most exciting projects you are working on at the moment?

Building an initial version of GENI.

Do you have a blog? Other blogs I like http://boingboing.net

A surprising fact about you I'm a frustrated drummer.

Clearly, the best movie of all time is Anything by Hayao Miyazaki: "My Neighbor Totoro", "Spirited Away", etc

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Aditya Akella University of Wisconsin-Madison

What key words or phrases would you use to describe your research

Routing
Network management
Content-based/Data-oriented network systems

Challenges

Network security and easy/efficient access to rich content

What are the most exciting projects you are working on at the moment?

Redundancy elimination architectures, Complexity metrics for network design, Data center traffic engineering, Naming information in content, End-to-middle contract systems, Troubleshooting Cloud computing platforms
Network assisted mobile power management using OpenFlow

Do you have a blog? Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is

Anant Sahai UC Berkeley

What key words or phrases would you use to describe your research

Cognitive Radio, Wireless Regulation, Distributed Control, Information Theory, Delay, Feedback, Power Consumption, Light-handed regulation, spectrum sensing, separation theorems

Challenges

Preventing the present from strangling the future in its cradle

What are the most exciting projects you are working on at the moment?

Developing a systematic approach to wireless spectrum zoning that takes flexibility and uncertainty into account. Related to understanding the fundamental limits of light-handed approaches to wireless regulation.
Understanding the role of implicit communication in distributed control systems by means of a new attack on the 40-year-old Witsenhausen counterexample.
Viewing power-consumption as the right metric for computational complexity in the context of wireless communication problems --- especially those at short range.

Do you have a blog? www.eecs.berkeley.edu/~sahai/ Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is Anything by Hayao Miyazaki ...

Arjan Durresi Indiana University - Purdue University Indianapolis

What key words or phrases would you use to describe your research

Network architectures; security; wireless and optical networking; performance evaluation; biocomputing.

Challenges

I think that the biggest challenge is to design an architecture that on one hand satisfy various requirements regarding security, scalability, QoS, etc. and on the other hand is suitable to be deployed in a business oriented environment.

What are the most exciting projects you are working on at the moment?

New architecture for mobility and security in Internet.
Secure ubiquitous networking system for healthcare.

Secure and scalable networking for emergency situations.
Security in heterogeneous network environments.
QoS optical routing. Video over wireless.

 www.cs.iupui.edu/~durresi

The Godfather

Arun Venkataramani UMass Amherst

Mobile, wireless, and disruption-tolerant networking, peer-to-peer systems, interdomain routing, virtualization.

Designing protocols with malicious participants in mind.

Designing for mobility and intermittent connectivity.

"A robust protocol stack for diverse wireless networks."
"A swarming architecture for Internet data transfer."
"Towards five nines availability in Internet routing."

Beichuan Zhang The University of Arizona

routing, topology, multicast, security

making the architecture capable to evolve over time.

Enabling Future Internet Innovations through Transit Wire (eFIT)

Bill Lehr MIT

Industry Economics and Public Policy, Regulatory Policy of Internet Infrastructure
Industries. Broadband Access, Spectrum Management,
Wireless, Architecture.

Integration of economics and policy considerations to enable more robust evolution and manageability in socio-economic context.

Next Generation Wireless Futures, Internet traffic analysis

I spent a year as an urban planner in Baghdad.

Baby Doll

Bruce Davie Cisco Systems, Inc.

Economically viable network architectures. Application of end-to-end argument to the 21st century Internet
Network and system architectures for video. Applications of overlays and peer-to-peer technologies for service provider networks

We need to take bold steps that are not constrained by incremental deployment considerations, and yet we also need to figure out how to deploy the new ideas

What are the most exciting projects you are working on at the moment?

Investigating the appropriate ways to enhance networks for video delivery

Do you have a blog? blog.sigcomm.org/   Other blogs I like http://www.bitsbook.com/blog/

A surprising fact about you   I finished 1 minute ahead of Lance Armstrong in the 2008 Boston marathon

Clearly, the best movie of all time is   Trainspotting

Bruce Maggs Duke, Akamai, and Carnegie Mellon

What key words or phrases would you use to describe your research

Networking protocols, Internet measurement, design of large distributed systems

Challenges

What are the most exciting projects you are working on at the moment?

Do you have a blog? Other blogs I like

A surprising fact about you   I have saved three people's lives

Clearly, the best movie of all time is

Byrav Ramamurthy   University of Nebraska-Lincoln

What key words or phrases would you use to describe your research

Optical Networks, Wireless Networks, Network Security

Challenges

Flexibility: The architecture has to support current, emerging and unknown applications.

What are the most exciting projects you are working on at the moment?

Scheduling resources in Lambda Grid networks (sponsor: DOE); Great Plains Environment for Network Innovations (NSF/GENI); Statewide Groundwater Monitoring Sensor Network (USDA); Peer-to-peer multimedia streaming (UNL); Multi-layer survivability in telecommunication networks (AT&T)

Do you have a blog? cse.unl.edu/~byrav/Research.html   Other blogs I like http://www.lightreading.com/

A surprising fact about you   how I enjoyed my whitewater rafting trip down the South Fork of the American river.

Clearly, the best movie of all time is   Shichinin no samurai (The Seven Samurai)

Carl Landwehr IARPA

What key words or phrases would you use to describe your research

security
dependability
trustworthiness

Challenges

What are the most exciting projects you are working on at the moment?

Automatic Privacy Protection, STONESOUP

Do you have a blog? Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is

Caterina Scoglio Kansas State University

What key words or phrases would you use to describe your research

Robustness, topology, complex networks, complex systems.

Challenges

To consider robustness as one of the few fundamental principles over which to base the design of the new internet architecture.

What are the most exciting projects you are working on at the moment?

complex systems show emergent behaviors caused by the unpredictable yet rare non-linear interactions of their numerous social, physical and cyber components. Complex systems can experience disruptive and massive failure, such as the blackout of the Northeastern states, the halt on maritime and rail operations in the UK and Australia. Our research aims at 1) determining theoretical characteristics of robust complex networks and 2) improving the robustness of the system by implementing mitigation strategies against cascading and common-mode failures.

Do you have a blog? www.ece.ksu.edu/~caterina/   Other blogs I like   http://www.sciencemag.org/

A surprising fact about you   I really like living and working in Kansas!

Clearly, the best movie of all time is   The Godfather: Part II is one of my favorite films.

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cetin seren Cisco

What key words or phrases would you use to describe your research

security, intrusion detection, traffic classification, data leakage prevention, DLP, access control, net neutrality, differentiated services, malware detection, botnets

Challenges

Cybertrust: a security infrastructure that is designed into the networks rather than being retrofitted as an afterthought

What are the most exciting projects you are working on at the moment?

clustering of flows, malware detection, botnets

Do you have a blog?   Other blogs I like

A surprising fact about you   I ride a motorcycle

Clearly, the best movie of all time is   MASH

Chase Cotton Electrical and Computer Engineering, University of Delaware

What key words or phrases would you use to describe your research

Challenges

What are the most exciting projects you are working on at the moment?

Do you have a blog?   Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is

Chris Hoofnagle UC Berkeley

What key words or phrases would you use to describe your research

Law of information privacy and security

Challenges

Inertia

What are the most exciting projects you are working on at the moment?

-Authentication in credit granting relationships and identity theft.
-Consumers' privacy attitudes, knowledge, and behavior.
-Flash cookies & unique user tracking
-Remedying privacy harms

Do you have a blog? scienceblogs.com/denialism/   Other blogs I like   http://gawker.com/

A surprising fact about you   My wife is pregnant and we're expecting a boy in December!

Clearly, the best movie of all time is   Persona

Christos Papadopoulos Colorado State University

What key words or phrases would you use to describe your research

Network security, measurements

Challenges

Defining the requirements.

What are the most exciting projects you are working on at the moment?

Spectral analysis of network traffic, DDoS defense approaches, network measurements.

Chuanyi Ji Georgia Tech

Machine learning, Network management and security, large-scale measurements

network security and privacy issues

Large scale measurements relating to complex networks (physical and organizational)

users.ece.gatech.edu/~jic

My hobby

Casablanca/Lord of the Ring

Craig Partridge BBN Technologies

Future focussed networking problems.

A better addressing/routing scheme.

I believe there's plenty of bandwidth (the Deering hypothesis appears to hold if you look at the potential spectrum use in

The future of software radios. The potential of network science.

Claude Rains was my great-uncle

Casablanca

Dan Massey Colorado State University

routing, naming, infrastructure security, routing security, DNS security, DNSSEC, BGP

trade-off between robustness and security

BGP route monitoring
DNS Security deployment
Developing new routing algorithms
Failure handling in routing protocols

Daniel Duchamp Stevens Institute of Technology

How to accommodate different socio-economic views, held by different individuals/societies around the world, about what capabilities the Internet should provide/allow and who should manage it (or parts of it).

Future Internet design

Darleen Fisher National Science Foundation

David Clark MIT Computer Science and AI Lab

Internet Architecture
Security
Socio-economic implications of networking
Security, management, economic viability, social and cultural variability, tussle
Internet security issues, comparative policy studies, cyberspace and international relations.

Monty Python and the Holy Grail

David Tennenhouse New Venture Partners

New approches to research, innovation and tech transfer.
Open Collaboration.
Network Coding and Content-based networking
Restoring architectural diversity
Collaboration amongst reseachers
Start Wars IV (at least my 8 years old thinks so)

Dipankar Raychaudhuri WINLAB, Rutgers University

Network architecture & protocols; wireless communications; dynamic spectrum and cognitive radio; pervasive systems; experimental networking testbeds.
I feel that the key architectural challenge is to design a flexible network that is legacy (IP) compatible, meets the full range of current requirements, and can be upgraded in the future. I also believe that any future network architecture should be designed to work really well (no gateways!) for the ~10B wireless/mobile devices that will likely be connected to the Internet

Cache-and-forward protocols for mobile content delivery;
"CogNet" architecture for cognitive radio networks;
Wireless network virtualization;
ORBIT and GENI networking testbeds

Do you have a blog?   Other blogs I like   http://www.winlab.rutgers.

A surprising fact about you   TBD

Clearly, the best movie of all time is   The English Patient

Edmund Yeh Yale University

What key words or phrases would you use to describe your research

Network science, Wireless networks, Cross-layer network design, Distributed optimization, Mobility, Network economics, Information theory, Coding for wireless networks.

Challenges

Unify the perspectives of various disciplines such as network science, information theory, network optimization, distributed protocols, game theory, and network coding to arrive at a more coherent fundamental view of networking.

What are the most exciting projects you are working on at the moment?

Network science for wireless communication; Information spread and epidemics in wireless networks; Wireless network resilience to cascading node failures; Mobility and network connectivity; Coding and mobility for optimal throughput and delay; Pricing and incentives in networks; Coding for wireless relay and interference networks.

Do you have a blog? pantheon.yale.edu/~ey36/   Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is

Ellen Zegura Georgia Tech

What key words or phrases would you use to describe your research

DTN and opportunistic wireless networks
Networking in regions of scarcity
Network topology and experimentation

Challenges

What are the most exciting projects you are working on at the moment?

Network topology starting with structure
Computing for good
Architectures for regions of scarcity
A wireless and mobility continuum

Do you have a blog?   Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is   umm...how about the best book?

Fabian E. Bustamante Northwestern University

What key words or phrases would you use to describe your research

Large-scale networked services, new content distribution services, peer-to-peer, measurement

Challenges

Defining a useful experimental platform for exploring new ideas (and, no, that's not GENI). Smooth transition from the current Internet.

What are the most exciting projects you are working on at the moment?

Ono - P2P & ISP relationship.
NEWS & NEWSight - Monitoring service-level network events, users experience, from the edge of the network.
Where the sidewalk ends - Revealing the hidden corners of the Internet topology with the help of P2P systems.
SwarmScreen - Hiding in the crowd of P2P systems.
A global census of network interference.
C3R - Ensuring urban sustainability with the help of car-to-car networks.

Do you have a blog? Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is   The Bicycle Thief (1948), directed by Vittorio de Sica

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Frank Olken   National Science Foundation

What key words or phrases would you use to describe your research

database management,
data semantics,
semantic web,

Challenges

What are the most exciting projects you are working on at the moment?

Do you have a blog?   twitter.com/frankolken   Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is

Gene Tsudik   University of California, Irvine

What key words or phrases would you use to describe your research

Network Security and Privacy, Applied Cryptography

Challenges

Reconciling privacy and accountability

What are the most exciting projects you are working on at the moment?

RFID security, private set operations

Do you have a blog?   Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is

George Kesidis   The Pennsylvania State University

What key words or phrases would you use to describe your research

incentives, games, theory, simulation

Challenges

Understanding the nature of the architectural changes
of the existing Internet, and how to influence this process.

What are the most exciting projects you are working on at the moment?

A short book on on-line social networking models and
analysis.

Do you have a blog?   Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is

Guanling Chen   University of Massachusetts Lowell

What key words or phrases would you use to describe your research

Context-Aware Mobile Computing
Social Network Analysis
Wireless Networks

Challenges

Creating tangible values/utilities for all of service providers, application developers, and end users.

What are the most exciting projects you are working on at the moment?

Mobile/online social network analysis and how the results impact systems, networks, and applications.

Do you have a blog?   Other blogs I like

A surprising fact about you   I can sleep through a 14-hour international flight without alcohol.

Clearly, the best movie of all time is   The Matrix

Guru Parulkar Stanford Univ

Software defined networking, OpenFlow, Clean Slate Internet Design, Unified Control Plane for Packet and Circuit, Separation of Data and Control planes, Programmable Open Mobile Internet.

Open the Internet especially the packet substrate for innovations so more people can find and try their solutions to well understood problems.

OpenFlow, software defined networking, programmable open mobile internet.

www.parulkar.com

Henning Schulzrinne Columbia University

Programmable components
Network management
Application support

Defining requirements and the factor-10 improvement metric. User focus: what do Internet users get out of this?

DYSWIS - distributed fault diagnostics
NetServ - programmable routers
NG911 - next-generation 9-1-1

I collect owls.

Ihsan Ayyub Qazi University of PIttsburgh

Transport protocols, congestion control, wireless networks,

(1) Thinking beyond the current architecture to be able to see future issues that may crop due to the design aspects.
(2) Evaluation: How would we evaluate such an architecture?

James Griffioen University of Kentucky

network architecture
network protocols
programmable networks

Incorporating economic interests and incentives as a fundamental building block of the network architecture. Tightly coupled with economic interests are security interests that must be protected. Users and providers alike want to be able to establish secure trusted relationships where they can safely deliver services and receive compensation for services ranging from

Postmodern (PoMo) Internet Architecture Project (http://www.netlab.uky.edu/pomo) - is taking a clean slate approach to the design of the network layer, separating policy from mechanisms so that policies can change and evolve over time without the need to change the underlying mechanisms.
Instrumentation Tools for a GENI Prototype (http://groups.geni.net/geni/wiki/InstrumentationTools) is developing

instrumentation tools for the ProtoGENI network as well as ways to make the output from these tools easily accessible to users.

Do you have a blog? Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is

Jeff Burke UCLA School of Theater, Film and Television

What key words or phrases would you use to describe your research

intersection of creative expression and technology;
experience infrastructure (let's see what that means...);
authoring tools (for creating with said infrastructure);

Challenges

To not be limited to only logical extensions of today's uses in envisioning what the network can support and, even better, engender. (For example, read the Public Broadcasting Act of 1967, http://www.cpb.org/aboutpb/act/pbact.pdf)

What are the most exciting projects you are working on at the moment?

Experiments in community-focused, media-rich public space experiences with California State Parks at the Los Angeles State Historic Park. Development of new production technology and approaches for live performance.

Do you have a blog? Other blogs I like Our work:

A surprising fact about you

Clearly, the best movie of all time is I don't know about the greatest, but I'd recommend Chris Marker's Sans Soleil (1983)

Jeffrey V. Nickerson Stevens institute of Technology

What key words or phrases would you use to describe your research

design of information systems, visualization, social network analysis

Challenges

The issue of architectural ownership, and its implications for spam, censorship, and anonymity.

What are the most exciting projects you are working on at the moment?

I am studying how to increase the creativity of systems designers. In related work, I am studying the role of diagramming in the design of systems. Also, I am performing research on the way influence is built in social networks.

Do you have a blog? Other blogs I like

A surprising fact about you I received an M.F.A. form Rhode Island School of Design.

Clearly, the best movie of all time is Until the End of the World

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Jianli Pan Washington University

What key words or phrases would you use to describe your research

Next generation Internet architecture

Challenges

What are the most exciting projects you are working on at the moment?

Do you have a blog? Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is

Jie Wu Temple University

What key words or phrases would you use to describe your research

Routing protocols, DTNs, mobile computing

Challenges

Better support service-oriented arch. for wireless networks and mobile computing

What are the most exciting projects you are working on at the moment?

Graph theoretical model for DTNs
Service-oriented arch for mobile environment

A surprising fact about you   I never planed to come to US during my colleage years

Clearly, the best movie of all time is   Doctor Zhivago

Jim Kurose University of Massachusetts

What key words or phrases would you use to describe your research

Network protocols, cyber-physical systems, sensor networks, measurement

Challenges

(i) focus on flexible end-use-driven architectures (ii) making today's "edge" networks (e.g., wireless networks, sensor networks) more central

What are the most exciting projects you are working on at the moment?

Statewide (Massachusetts) green high performance computing project.; NSF ERC on Collaborative Adaptive Sensing of the Atmosphere (CASA)

Do you have a blog? Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is

Joe Touch USC/ISI

What key words or phrases would you use to describe your research

Virtual network architecture
Optical Internet router design
Transport protocol security

Challenges

The biggest challenge to me is how to enable a new architecture without requiring that existing users "do things my way", i.e., reimplement legacy apps or design new apps in a some new development environment, test the architecture in a particular testbed, etc.

What are the most exciting projects you are working on at the moment?

An all-optical Internet router design based on the game "Tetris", that uses variable-speed conveyor queues to either switch or aggregate packets, and includes all-optical packet processing (TTL decrement, address lookup, IP checksum).
Also exploring "things that break existing architectures", i.e., reevaluating the assumptions of existing architectures - e.g., what if all exchanges were one packet long, what if packets were longer than the BW*delay between components, etc.

Do you have a blog? Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is   Depends on the context. Here, perhaps "Bridge on the River Kwai"

John Chuang UC Berkeley

What key words or phrases would you use to describe your research

economics-informed network design

Challenges

What are the most exciting projects you are working on at the moment?

economics of interdependent security; economics of user-directed routing; economics of network virtualization; p2p business models; ICTD (information communication technologies and development)

Do you have a blog? Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is   too many movies I like

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John Musacchio University of California, Santa Cruz

What key words or phrases would you use to describe your research

Game Theory applied to Internet Economics and Network Security, Network Performance Modeling.

Challenges

I think the biggest challenge is for the community to come to a consensus as to what are the most significant shortcomings in our current architecture that we would like to see improved in a modified one.

What are the most exciting projects you are working on at the moment?

"Improving Internet Incentives" -- an NSF project to study the role of externalities in the shortcomings of the current Internet and to seek out remedies for them; Out-learning Attackers: A Game Theoretic Approach to Cyber Defense (AFOSR)

Do you have a blog?   Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is

John Wroclawski   University of Southern California Information Sciences Institute

What key words or phrases would you use to describe your research

Architectural principles, structure of complex systems. Evaluation of systems and architectures - methodologies, principles, testbeds, new approaches.

Challenges

Convincing anyone there's a need :l.

What are the most exciting projects you are working on at the moment?

The DETER cybersecurity testbed - trying to create new methodologies, environments, tools, metrics for understanding and evaluating "security".
Selling and advancing the idea of theoretically defined architectures.

Do you have a blog?   Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is

Jon Peha   Carnegie Mellon University and Federal Communications Commission

What key words or phrases would you use to describe your research

technical and policy issues of wireless and broadband networks

Challenges

Developing an evolution path from old to new, and creating appropriate incentives for all players

What are the most exciting projects you are working on at the moment?

National Broadband Plan for U.S.,
network neutrality,
spectrum sharing using cognitive radio,
public safety communications systems,
network monitoring of security threats and potentially unlawful activities

Do you have a blog?   blog.broadband.gov/?author=25   Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is

Jun Li   University of Oregon

What key words or phrases would you use to describe your research

Network security, routing forensics, malware defense

Challenges

What are the most exciting projects you are working on at the moment?

Routing (BGP) forensics, behavior-based worm detection, a new method on prefix hijacking detection, proactive phishing disruption, IP source address validation

Do you have a blog?   Other blogs I like   http://www.cs.uoregon.edu/~lijun

A surprising fact about you

Clearly, the best movie of all time is

Karen Sollins   MIT

What key words or phrases would you use to describe your research

Network architecture, network management architecture, naming, security, distributed systems

Challenges

communications objectives usually involve transport, sharing, communication, exchange, collaboration, etc. "Right" means finding the balance that allows for different choices under different conditions, but in the context of where fundamentals may

What are the most exciting projects you are working on at the moment?

Learning about distributed network management problems from real network managers

Do you have a blog?   Other blogs I like

A surprising fact about you   I am a Scottish Country Dancer and perform with the Boston area demonstration team. I am

Clearly, the best movie of all time is

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kc claffy   uc san diego

What key words or phrases would you use to describe your research

* collection, analysis, and visualization of internet data related to topology, routing, workload, and performance
* isp cooperation in face of commercialization/competition
* engineering and traffic analysis requirements of the commercial internet community

Challenges

http://www.caida.org/outreach/presentations/2005/topproblemsnet/

http://www.caida.org/publications/papers/2008/lawyers_top_ten/lawyers_top_ten.pdf

What are the most exciting projects you are working on at the moment?

http://www.caida.org/funding/nets-find/
http://www.caida.org/funding/cybersecurity/index.xml
http://www.caida.org/workshops/wie/0909/

Do you have a blog? blog.caida.org   Other blogs I like linked from blog

A surprising fact about you   i have 13 nieces and nephews.

Clearly, the best movie of all time is   (in FIND context) fitzcarraldo

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Ken Calvert   University of Kentucky

What key words or phrases would you use to describe your research

Network protocols
Network architecture
Protocol design and implementation

Challenges

It has to be built separately, start small, and grow organically until it takes over -- like the Internet. For that to happen, it has to offer enough benefits (and low enough cost) to provide enough incentive for people to check it out and eventually join.

What are the most exciting projects you are working on at the moment?

Postmodern Internet Architecture - clean-slate design of a network layer
Toward Human-Network Interaction - developing strategies and architectural principles for improving home networks

Do you have a blog? Other blogs I like

A surprising fact about you   I played varsity water polo as an undergrad at MIT.

Clearly, the best movie of all time is   Casablanca

Ken Christensen   University of South Florida

What key words or phrases would you use to describe your research

Green networks

Challenges

I think that to be sustainable/scalable the new Internet must be energy-proportional - that is, energy use should be a function of utilization and not capacity (as it is today).

What are the most exciting projects you are working on at the moment?

The most exciting project I am currently working on is finding new ways to reduce the energy use of Internet-connected hosts by using proxying.

Do you have a blog? Other blogs I like Michael Mitzenmacher's blog -- http:

A surprising fact about you   I am crazy about Saabs. My daily driver is a 1987 Saab 900.

Clearly, the best movie of all time is   Jurassic Park (for its quantum jump in special effects)

Konstantinos Psounis USC

Blending theory and practice: Modelling, design, and performance analysis of a variety of networks including the Internet, mobile ad hoc networks, delay and disruptive tolerant networks, sensor networks, mesh networks, peer to peer networks and the web. Design of methods and algorithms to solve problems related to such systems.

Challenges

Achieving backward compatibility without undermining real meaningful change, or acquiring enough power to force change even in the absence of backward compatibility.

What are the most exciting projects you are working on at the moment?

Scheduling, routing, and transport in wireless multi-hop networks. Two recent, specific projects:
i) Multiple-packet reception in multi-hop wireless networks with electronically steerable directional antennas.
ii) Packet header overhearing under low SNR and applications in multi-hop wireless networks.

Do you have a blog? www-rcf.usc.edu/~kpsounis/   Other blogs I like

A surprising fact about you   how much I am into chasing and riding big ocean waves.

Clearly, the best movie of all time is

Lan Wang University of Memphis

What key words or phrases would you use to describe your research

Internet architecture design;
Internet routing measurement and protocol design;
network security.

Challenges

network security, scalability, management

What are the most exciting projects you are working on at the moment?

Enabling Future Internet Innovation via Transit Wire, Building the Next-Generation Global Routing Monitoring System

Do you have a blog? www.cs.memphis.edu/~lanwang/   Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is   Lawrence of Arabia

Lance Hoffman George Washington University

What key words or phrases would you use to describe your research

security
privacy
social impact

Challenges

Incentivizing people to adopt and pay for a new architecture that displaces their old one

What are the most exciting projects you are working on at the moment?

re-booting a cyber security and policy institute at the university

Do you have a blog? Other blogs I like

A surprising fact about you   I sing in a neighborhood ensemble that's done Christmas and vocal jazz music and is now

Clearly, the best movie of all time is   Live Free or Die Hard (for this crowd)

Lenore Zuck NSF

What key words or phrases would you use to describe your research

PD

Challenges

What are the most exciting projects you are working on at the moment?

Do you have a blog? 4201 Wilson Blvd, RM 1115N   Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is

Leszek T. LILIEN Western Michigan University

privacy and security
specialized ad hoc networks (SAHNs)
opportunistic resource/capability utilization networks

privacy and trustworthiness in general
support support for application areas

privacy - active bundles
opportunistic resource/capability utilization networks

http://www.cs.wmich.edu/~llilien/

Lixia Zhang UCLA

Internet architecture

Understanding the problems we are facing.

Lixin Gao University of Massachusetts, Amherst

Internet Routing, Network virtualization, Routing security

Maarten Sierhuis Carnegie Mellon Silicon Valley / NASA Ames Research Center

Agent-oriented programming -AOP- and the design & application of agent-oriented programming languages -AOL- for incorporating models of human behavior & practice into distributed multi-agent systems. Human Agent Interaction -HAI- A subfield of Human-Centered Computing -HCC- & is the intersection of how people & autonomous actors interact as a team.

Distributed computing, mobile computing, personal services and security.

OCAMS: The Orbital Communications Adapter Management System (OCAMS) is a distributed multi-agent system that automated the uplinking and downlinking of all files to/from the International Space Station. OCAMS is developed with the Brahms language and is used 24x7 by flight controllers at NASA's Mission Control Center in Houston, TX.
Mobile Agents: Over the past eight years, we have developed a distributed mobile software architecture for human-robot planetary exploration. This architecture integrates personal agent technology with mobile and distributed actors and devices.

Marco Gruteser WINLAB @ Rutgers Univ

Martin Weiss University of Pittsburgh, School of Information Sciences

Techno-economics, telecom policy, spectrum markets,

Building a usable framework that is sufficiently flexible for future (unknown) applications and different governmental/regulatory approaches.

I am using agent based computational economics to model different approaches to dynamic spectrum access systems, such as secondary spectrum use and secondary markets for spectrum licenses. I think this approach is powerful because technical, economic and behavioral features can be combined into a simulation of a synthetic system.

telcom2935.blogspot.com   I find these sites interesting reading:

I love to ski and ride motorcycles. I am fluent in German.

Being There (or not!)

Matthew Caesar University of Illinois at Urbana-Champaign

Routing, addressing, Internet

Network management, network security.

Bug-tolerant networks: the Internet is composed of some of the most complex software in existance. Like any complex software, it is prone to software errors and vulnerabilities. I am working on designing network architectures that are resilient to errors in its software.
Identity-based routing: conventional networks are built by assigning topology-dependent addresses to nodes (e.g., IP addresses), but topology-dependent addressing complicates mobility, multihoming, and network configuration. I work on building networks that scale without requiring topology-dependent addressing.

mybiasedcoin.blogspot.com

The Godfather

Michael O'Donnell The University of Chicago

First, getting away from the "biggest challenge" way of thinking. How about "useful underpinning"? One important challenge is to keep adjusting the architecture to avoid as much as possible the need for governance. Far too much effort is spent (I bit my tongue before saying, "wasted") on fighting about governance, instead of avoiding it through good engineering

New approach to time-frequency analysis based on estimation theory
Seeking a site willing and able to implement minimal public-key infrastructure based on DNS.
Recording my Personal Folk Legacy

Don't like blogs a lot. I have a <a href="http:

Michael Rabinovich Case Western Reserve University

What key words or phrases would you use to describe your research

Web performance and scalability, Internet measurements, security

Challenges

Keep it open yet trustworthy/secure. Engineer it in a way that makes it feasible to reason about (it's our own creation; why does its behavior have to be so hard to measure/understand/reason about?).

What are the most exciting projects you are working on at the moment?

Spam protection and prevention, anycast-based content delivery networks, security implications of content delivery networks, utility and cloud computing.

Do you have a blog?   Other blogs I like

A surprising fact about you   ... that I was a professionally trained pianist and plan to start a career as a classical composer

Clearly, the best movie of all time is

Murat Yuksel University of Nevada - Reno

What key words or phrases would you use to describe your research

routing economics, network economics, free-space-optical networks, peer-to-peer

Challenges

The biggest challenge is to make the temporal and spatial granularity of inter-domain economics closer to the granularity of packet-level protocols.

What are the most exciting projects you are working on at the moment?

Contract-Switching: Value Flows and Risk Management Architecture for Future Internet
FSO-MANETs: Free-Space-Optical Mobile Ad-hoc Networks
Top-Down Networking with Application-Specific Constraints
Value of Class-of-Service (CoS) Support in the Internet Backbone
DTONs: Towards Disconnection Tolerant, Opportunistic Internet
Multicast Reconfiguration in Backbone Video Networks

Do you have a blog? www.cse.unr.   Other blogs I like

A surprising fact about you   I have FOUR kids.

Clearly, the best movie of all time is   Godfather

Nick Feamster Georgia Tech

What key words or phrases would you use to describe your research

Network Security
Network Operations

Challenges

- Identity and attribution
- SLA enforcement
- Support for flexible interconnection markets

What are the most exciting projects you are working on at the moment?

* Information Flow Control in the Network
* A Layer for Censorship-Resistant Communication
* Spam Filtering and Phishing Defenses
* Elastic Networking
* Market for Internet Transit
* Scalable, Evolvable Multipath Routing

Do you have a blog? www.cc.gatech.edu/~feamster/   Other blogs I like   Renesys Blog

A surprising fact about you

Clearly, the best movie of all time is

nick mckeown stanford

Nikita Borisov   University of Illinois at Urbana-Champaign
What key words or phrases would you use to describe your research
privacy enhancing technology, anonymity, network security, intrusion detection, peer-to-peer networks
Challenges
The biggest challenge, in my mind, is deployment; just look at IPv6
What are the most exciting projects you are working on at the moment?
Encrypted traffic analysis; peer-to-peer anonymous communication

Do you have a blog? hatswitch.wordpress.com/   Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is

Nirmala Shenoy   Rochester Institute of Technology
What key words or phrases would you use to describe your research
Scalable ad robust algorithms for routing in highly mobile ad hoc networks.
Internet architectures that are scalable and easy to transition
Challenges
Original thinking for robust architectures that can fit into the current Internet paradigm with ease.
What are the most exciting projects you are working on at the moment?
Tier-based address aggregations and the Floating Cloud tiered architecture for the Internet related to the 'Future Internet design' project - funded by NSF

A framework for networking of over one hundred unmanned aerial vehicles that are collecting data from ground sensors. To internetwork several such tactical networks. funded by AFRL and ONR

Do you have a blog?   Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is

Patrick Crowley Washington University
What key words or phrases would you use to describe your research

Challenges
What are the most exciting projects you are working on at the moment?

Do you have a blog?   Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is

Patrick Traynor Georgia Institute of Technology
What key words or phrases would you use to describe your research
Network Security, Cellular Security, Applied Cryptography
Challenges
Ensuring that cellular networks, which are significantly different from traditional Internet architectures, seamlessly and securely integrate with the new core.

Remote Repair - We are currently constructing a system that allows cellular networks and mobile devices to collaboratively identify and remove malicious software.

Peter Reiher UCLA

Network security
Distributed denial of service attacks
IP spoofing

Data Tethers - a project to tie security policies to data inside an operating system at a fine granularity

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Peter Steenkiste Carnegie Mellon

Wireless networking, mobility

Practical integration of techniques developed to deal with specific challenges for the future internet (security, mobility, disruption tolerance, usability, manageability, etc.).

The wireless network emulator testbed.

Monty Python and the Holy Grail

Rahul Jain USC

Communication Networks, Economics, Game Theory

Network Management, Security and Economics

Network Market Designs, Incentivized Spectrum Sharing Mechanisms, QoS Architectures, Multi-Armed Bandit Models

That I still do not know how to swim

Vodka Lemon

Raj Jain Washington University in Saint Louis

Next Generation Internet Architecture
Wireless Networks
Routing Architecture for the Next Generation Internet

Transition mechanism to the new architecture should be such that every organization has that switches to the new architecture benefits immediately from the change and does not have to wait for benefits until the rest of the world changes (as is the case with IPv6). These benefits would accrue from limitations of the current Internet in the areas of security, policy

What are the most exciting projects you are working on at the moment?

Internet 3.0
WiMAX

Do you have a blog? Other blogs I like http://www.cse.wustl.

A surprising fact about you   that I am a night person and often go to sleep at 5AM.

Clearly, the best movie of all time is   Gandhi

Ravi Sandhu University of Texas at San Antonio

What key words or phrases would you use to describe your research

Security models, architectures and platforms

Challenges

Appreciation for the practical needs of simplicity, effectiveness and elegance versus the academic mindset of novelty and intricacy for their own sake

What are the most exciting projects you are working on at the moment?

Assured information sharing, Social media security, Cloud computing security, Malware detection and mitigation, High assurance security

Do you have a blog? Other blogs I like www.profsandhu.com

A surprising fact about you   I am an intrinsically lazy person and that drives my approach to science and life, such as keep-

Clearly, the best movie of all time is   The Matrix

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rea Western Michigan University

What key words or phrases would you use to describe your research

Security, Digital Forensics, Virtual Realm Development and Object Management, Virtual Organizations

Challenges

Security and Credentialing of Applications and Functions
Identity Management

What are the most exciting projects you are working on at the moment?

Security in Virtual Realms, 3D Webs, and Immersive Environments
Virtual Object Control, Versioning, and IP Management

Do you have a blog? docrea.org   Other blogs I like http://slashdot.org

A surprising fact about you   I play the tuba

Clearly, the best movie of all time is   Monty Python and the Holy Grail

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Richard Martin Rutgers University

What key words or phrases would you use to describe your research

Mobile Computing, Geometric Routing, Location Based Services

Challenges

What to throw away. How will it enable: Security, Authentication, Virtualization, Geometry, mobility, one-way communication.

What are the most exciting projects you are working on at the moment?

Do you have a blog? Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is

Richard Yang Yale University

What key words or phrases would you use to describe your research

Traffic engineering, network efficiency

Challenges

Network management, security

What are the most exciting projects you are working on at the moment?

Programming language for network management, P4P, network debugging

Robin Kravets UIUC

What key words or phrases would you use to describe your research

wireless networking, mobile computing

Challenges

integrating edge devices

What are the most exciting projects you are working on at the moment?

mobile social networking for undergrads, vehicular sensing networks

Do you have a blog? Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is

Rudra Dutta North Carolina State University

What key words or phrases would you use to describe your research

Optical networking, wireless mesh networks, modular network software design, cross-layer tuning and optimization, architecture as meta-design.

Challenges

Expand the domain of responsibility of network software and operators
Create a sense of responsibility of every innovator to how it affects the whole
Work with other communities to find/demonstrate how networking can enrich other computing or non-computing disciplines,

What are the most exciting projects you are working on at the moment?

SILO - my FIND project
Designing and building a completely open and reconfigurable outdoor wireless mesh
GENI IMF - integrating and leveraging SILO with GENI control frameworks and optical layer measurements
SOSI - Secure Open Systems Initiative, mostly administrative job, though

Do you have a blog? www.net-silos.net   Other blogs I like My own website http://dutta.csc.ncsu.edu -

A surprising fact about you   Nothing comes to mind - I seem to be a boring person with no hidden depths.

Clearly, the best movie of all time is   Shatranj ke Khiladi (Hindi, Directed by Satyajit Ray, c1980)

Sam Weber NSF

What key words or phrases would you use to describe your research

security systems

Challenges

Secure infrastructure so that we don't continue to lose the battle with botnets.

What are the most exciting projects you are working on at the moment?

Do you have a blog? Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is

Scott Midkiff Virginia Tech

What key words or phrases would you use to describe your research

Cyber-physical systems; wireless networks; network support for pervasive computing

Challenges

Integrative research that balances depth with system-level thinking.

What are the most exciting projects you are working on at the moment?

Currently Electrical and Computer Engineering Department Head at Virginia Tech. Previously, Program Director at the NSF (9/2006-9/2009), where I was co-lead for the Cyber-Physical Systems solicitation (NSF 08-611) and program director for the Interactive, Hybrid and Complex Systems (IHCS) program in ENG/ECCS.

Sneha Kumar Kasera   University of Utah

What key words or phrases would you use to describe your research

Security, Wireless Networks, Mobile Networks, Social Networks

Challenges

What are the most exciting projects you are working on at the moment?

Do you have a blog?   Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is

Srinivasan Seshan   Carnegie Mellon University

What key words or phrases would you use to describe your research

My current work explores new approaches in wireless networking, online multiplayer games, network content caching and video delivery over the Internet.

Challenges

A set of applications that do not work well on today's Internet.

Past architectural proposals such as IP Multicast and QoS have been clearly driven by group communication and multimedia

What are the most exciting projects you are working on at the moment?

1) Video on the Internet. - We are exploring Internet architectural changes that enable more efficient multimedia transfer.
2) Redundancy elimination (RE) brings this to the Internet. An important open issue is how RE impacts other protocol designs -- e.g., can TCP retransmit more aggressively, should IP/overlay multicast designs change and should other protocols send traffic that is more RE friendly?
3) Edge networks - This project looks at various types of edge networks -- home networks, neighborhood networks and cellular networks.

Do you have a blog?   Other blogs I like

A surprising fact about you   I really like volcanoes and ancient ruins. My favorite place is Pompeii, Italy

Clearly, the best movie of all time is   Lord of the Rings

Subharthi Paul Washington University in St. Louis

What key words or phrases would you use to describe your research

Challenges

What are the most exciting projects you are working on at the moment?

Do you have a blog?   Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is

Sue Moon KAIST

What key words or phrases would you use to describe your research

Mobile PlanetLab, online social network, network performance measurement and analysis, internet-wide delay estimation

Challenges

Underlying economic incentive system that reflects concerns for security and fair competition between all types of contenders.

What are the most exciting projects you are working on at the moment?

consistent community identification, community evolution, internet-wide performance estimation, mobile planetlab

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Suman Banerjee University of Wisconsin-Madison

What key words or phrases would you use to describe your research

Wireless networks, wireless security, mobile systems and applications, network management

Challenges

What are the most exciting projects you are working on at the moment?

Wireless transmitter identification based on intrinsic signatures of RF front-ends; Management of wireless networks through client participation and client assistance (mobile phones, laptops, and other such client devices); Designing high-bandwidth vehicular networking services; Efficient delivery of wireless video

Do you have a blog?   Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is

Susan Hinrichs University of Illinois

What key words or phrases would you use to describe your research

security, networking, policy management, policy verification

Challenges

Building understandable, integrated security. If it is not carefully considered, security could be added in such a way that it is present, but the security stance is not understandable. If an organization cannot tell whether its security policy is accurately implemented, the security mechanisms are of limited importance.

What are the most exciting projects you are working on at the moment?

I am currently working in the area of network security policy verification. We are developing InfoSecter, the Information Security Dissector. This tool builds operational models of the network security appliances from their configuration files. We are currently developing constraint modules for PCI requirements.

Do you have a blog?   Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is

Susanne Wetzel Stevens Institute of Technology

What key words or phrases would you use to describe your research

Privacy, wireless security, biometrics, cryptographic protocol design.

Challenges

Security, privacy, and useability.

What are the most exciting projects you are working on at the moment?

Key generation from biometrics, privacy-preserving policy reconciliation, trust in ad hoc networks.

Do you have a blog?   Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is

Tarek Abdelzaher UIUC

What key words or phrases would you use to describe your research

Sensor networks, cyber-physical systems.

Challenges

Moving up from an infrastructure for data communication to an infrastructure for information management/distillation: organizing, managing, and transmitting world content.

What are the most exciting projects you are working on at the moment?

LiteOS, DustMiner, Phoenix, Green Way.

Do you have a blog?   Other blogs I like

Clearly, the best movie of all time is   Love Story

Ted Rappaport   The University of Texas at Austin

What key words or phrases would you use to describe your research

In-building high data rate communications, Physical Layer Wireless Communications, MAC layer Wireless Communications, Multi-user wireless communications Systems, Experimentalist, RF Integrated Circuit design, Antennas and Propagation,

Challenges

Dealing with the edge of the network, and the several orders of magnitude increase in data rates that will flood the edge of the network due to the proliferation of information showers andRF devices and sensors that will replace books and harddrives. We are in the very early days of such "pressures" by watching AT&Ts challenge to provide data rates to Iphone users.

What are the most exciting projects you are working on at the moment?

Design and Fabrication of on-chip antennas for 60 GHz, databases for maintaing usage and availability of wireless infrastructure

Do you have a blog?   www.wncg.org   Other blogs I like

A surprising fact about you   Well, here are 3 things: I greatly enjoy singing, especially barbershop quartet, and have been in

Clearly, the best movie of all time is   Star Wars

Van Jacobson   PARC

What key words or phrases would you use to describe your research

networking

Challenges

Boiling the ocean

What are the most exciting projects you are working on at the moment?

Content Centric Networking

Do you have a blog?   Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is

Vic Perotti   RIT

What key words or phrases would you use to describe your research

Inter-disciplinary, User-Focused

Challenges

Creating a sustainable large-scale industry (or similar) that supports innovation at all levels

What are the most exciting projects you are working on at the moment?

I am working as part of a 5 PI team developing a proposed architecture. My other research stream is developing explanations for what motivates social network adoption.

Do you have a blog?   victor.perotti.com   Other blogs I like   lifehacker.com

A surprising fact about you   I worked on David Bowie's Jump Interactive CDROM, back in the day!

Clearly, the best movie of all time is   The Holy Grail

Victor Frost   NSF

What key words or phrases would you use to describe your research

Program Director in CNS/CISE

Challenges

Integration of components

What are the most exciting projects you are working on at the moment?

Transportation security sensor network

Do you have a blog?   www.ittc.ku.edu/~frost/   Other blogs I like   http://www.nets-find.net/

A surprising fact about you

Clearly, the best movie of all time is   Casablanca

W. David Sincoskie University of Delaware

What key words or phrases would you use to describe your research

Networking, security, architecture

Challenges

security

What are the most exciting projects you are working on at the moment?

IPv6 adoption, Network Science

Do you have a blog?   Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is

Wenke Lee Georgia Institute of Technology

What key words or phrases would you use to describe your research

systems and network security, applied cryptography, data mining, intrusion detection, malware analysis, botnets.

Challenges

Securing the hosts: the goal should be to stop the hosts from sending bad traffic. We need cooperation between hosts and networks: on-host system should be able to annotate traffic from the host, and network security policies can be applied to the traffic.

What are the most exciting projects you are working on at the moment?

DNS/IP reputation database: what networks consistently host/support malicious/fraudulent activities. Security policies should be applied to traffic from/to these networks: e.g., block, inspect, or downgrade to lower priorities.

Do you have a blog?   Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is   star wars

Xiaojun Cao Georgia State University

What key words or phrases would you use to describe your research

Optical Networking

Challenges

complexity, control management, security

What are the most exciting projects you are working on at the moment?

Multi-granular Switching Framework for Optical Networks

Do you have a blog? www.cs.gsu.edu/cao   Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is

Yaling Yang Virginia Tech

What key words or phrases would you use to describe your research

Composable network design

Hardware-software codesign for networks

Challenges

Composable design of Internet components

What are the most exciting projects you are working on at the moment?

Cross-domain Design Tools for Sensor Network and Architecture

Study of the Fundamental Compatibility Space of Wireless Routing Metrics

Do you have a blog?   Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is

Yingfei Dong U of Hawaii

What key words or phrases would you use to describe your research

networking, and network security

Challenges

distributed collaboration across all kinds of borders

What are the most exciting projects you are working on at the moment?

application taffic tracing

Do you have a blog?   Other blogs I like

A surprising fact about you

Clearly, the best movie of all time is

Z. Morley Mao University of Michigan

What key words or phrases would you use to describe your research

Routing security, mobility support, network measurement, network management, network neutrality violation discovery, prefix hijacking detection and prevention

Challenges

cross disciplinary collaboration to ensure algorithmic solutions can be deployed in practice

What are the most exciting projects you are working on at the moment?

data cellular network analysis and improvement
network management using database abstractions

Do you have a blog?   Other blogs I like

A surprising fact about you   I am training for Marathon.

Clearly, the best movie of all time is   Lord of the rings