

Stanford



Sachin Katti

Associate Professor of Electrical Engineering and of Computer Science

Bio

BIO

Sachin Katti is currently an Assistant Professor of Electrical Engineering and Computer Science at Stanford University. He recently received his PhD in EECS from MIT in 2009. His research focuses on designing and building next generation high capacity wireless networks using techniques from information and coding theory. His dissertation research focused on redesigning wireless mesh networks with network coding as the central unifying design paradigm. The dissertation won the 2008 ACM Doctoral Dissertation Award - Honorable Mention, the George Sprowls Award for Best Doctoral Dissertation in EECS at MIT. His work on network coding was also awarded a MIT Deshpande Center Innovation Grant, and won the 2009 William Bennett Prize for Best Paper in IEEE/ACM Transactions on Networking. His research interests are in networks, wireless communications, applied coding theory and security.

ACADEMIC APPOINTMENTS

- Associate Professor, Electrical Engineering
- Associate Professor, Computer Science

HONORS AND AWARDS

- Grant, Okawa Foundation (2013)
- Best Paper Awards, ACM HomeNets (2011)
- Best Demonstration Award, ACM MOBICOM (2010)
- William Bennett Prize, IEEE (2008)
- Doctoral Dissertation Award, ACM (2009)

PROFESSIONAL EDUCATION

- PhD, MIT (2009)

LINKS

- <http://stanford.edu/~skatti>: <http://stanford.edu/~skatti>

Teaching

COURSES

2018-19

- Advanced Topics in Networking: CS 244 (Spr)
- Embedded Networked Systems: EE 107 (Spr)

2017-18

- Embedded Networked Systems: EE 107 (Aut)
- Self-Programming Networks: EE 392K (Win)

2016-17

- Advanced Topics in Networking: CS 244 (Spr)
- Embedded Networked Systems: EE 107 (Aut)

2015-16

- Embedded Networked Systems: EE 107 (Aut, Spr)

STANFORD ADVISEES

Doctoral Dissertation Advisor (AC)

Pan Hu

Publications

PUBLICATIONS

- **Copysets: Reducing the Frequency of Data Loss in Cloud Storage**
Cidon, A., Rumble, S., Stutsman, R., Katti, S., Ousterhout, J., Rosenblum, M.
2013
- **Scheduling Packets over Multiple Interfaces while Respecting User Preferences**
Yap, K. K., Huang, T., Yiakoumis, Y., Chinchali, S., Katti, S., McKeown, N.
2013
- **SoftRAN: Software Defined Radio Access Network**
Gudipati, A., Perry, D., Li, L. E., Katti, S.
2013
- **Late-Binding: How to Lose Fewer Packets during Handoff**
Yap, K., Huang, T., Yiakoumis, Y., McKeown, N., Katti, S.
2013
- **PinPoint: Localizing Interfering Radios**
Joshi, K., Hong, S., Katti, S.
2013
- **Making Use of All the Networks Around Us: A Case Study in Android**
Yap, K., Huang, T., Kobayashi, M., Yiakoumis, Y., McKeown, N., Katti, S.
2012
- **Deconstructing Datacenter Packet Transport**
Alizadeh, M., Yang, S., Katti, S., McKeown, N., Prabhakar, B., Shenker, S.
2012
- **Picasso: Flexible RF and Spectrum Virtualization**
Hong, S., Mehlman, J., Katti, S.
2012
- **OpenRadio: A Programmable Wireless Dataplane**
Bansal, M., Mehlman, J., Katti, S., Levis, P.
2012
- **AutoMAC: Rateless Wireless Concurrent Medium Access**

- Gudipati, A., Perreira, S., Katti, S.
2012
- **Practical Real-Time Full Duplex Wireless**
Jain, M., Choi, J., Kim, T., Bharadia, D., Srinivasan, K., Levis, P., Katti, S.
2011
 - **Slicing Home Networks**
Yiakoumis, Y., Yap, K. K., Katti, S., Parulkar, G., McKeown, N.
2011
 - **MARS: Adaptive Remote Execution for Multi-threaded Mobile Devices**
Cidon, A., London, T., Katti, S., Kozyrakis, C., Rosenblum, M.
2011
 - **FlexCast: Graceful Wireless Video Streaming**
Aditya, S., Katti, S.
2011
 - **Picasso: Full Duplex Signal Shaping to Exploit Fragmented Spectrum**
Hong, S., Mehlman, J., Katti, S.
2011
 - **Achieving Single Channel, Full Duplex Wireless Communication**
Choi, J. I., Jain, M., Srinivasan, K., Levis, P., Katti, S.
2010
 - **Cognitive Spatial Degrees of Freedom Estimation using Compressive Sensing**
Hong, S., Katti, S.
2010
 - **Automatic Rate Adaptation**
Gudipati, A., Katti, S.
2010
 - **Symbol-level Network Coding for Wireless Mesh Networks**
Katti, S., Katabi, D., Balakrishnan, H., Medard, M.
2008
 - **XORs in the Air: Practical Wireless Network Coding** *IEEE/ACM Transactions on Networking*
Katti, S., Rahul, H., Hu, W., Katabi, D., Medard, M., Crowcroft, J.
2008; 16 (3): 497-510
 - **Resilient Network Coding in the Presence of Byzantine Adversaries** *IEEE Transactions on Information Theory*
Jaggi, S., Langberg, M., Katti, S., Ho, T., Katabi, D., Medard, M.
2008; 54 (6): 2596-2603
 - **Real Network Codes**
Katti, S., Shintre, S., Jaggi, S., Katabi, D., Medard, M.
2007
 - **MIXIT: The Network Meets the Wireless Channel**
Katti, S., Katabi, D.
2007
 - **Information Slicing: Anonymity Using Unreliable Overlays**
Katti, S., Cohen, J., Katabi, D.
2007
 - **Embracing Wireless Interference: Analog Network Coding**
Katti, S., Gollakota, S., Katabi, D.

2007

- **Resilient Network Coding in the Presence of Byzantine Adversaries**

Jaggi, S., Langberg, M., Katti, S., Ho, T., Katabi, D., Medard, M.

2007

- **Trading Structure for Randomness in Wireless Opportunistic Routing**

Chachulski, S., Jennings, M., Katti, S., Katabi, D.

2007

- **XORs in the Air: Practical Wireless Network Coding**

Katti, S., Rahul, H., Hu, W., Katabi, D., Medard, M., Crowcroft, J.

2006

- **Slicing the Onion: Anonymous Routing without PKI**

Katti, S., Katabi, D., Puchala, K.

2005

- **Collaborating Against Common Enemies**

Katti, S., Krishnamurthy, B., Katabi, D.

2005

- **Using TCP Flow Aggregation to Enhance Data Experience of Cellular Wireless Users** *IEEE Journal on Selected Areas of Communications*

Chakravorty, R., Katti, S., Crowcroft, J., Pratt, I.

2005; 23 (6): 1190-1204

- **Practical Network Coding for Wireless Environments**

Katti, S., Katabi, D., Hu, W., Rahul, H., Medard, M.

2005

- **MultiQ: Automated Detection of Multiple Bottlenecks Along a Path**

Katti, S., Blake, C., Katabi, D., Strauss, J., Kohler, E.

2004

- **Cross Traffic: Noise or Data**

Blake, C., Katabi, D., Katti, S.

2003

- **Flow Aggregation for Enhanced TCP over Wide Area Wireless**

Chakravorty, R., Katti, S., Crowcroft, J., Pratt, I.

2003