Vinod Kone http://cs.ucsb.edu/~vinod

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Education

University of California, Santa Barbara
Ph.D in Computer Science
Sept 2006 - April 2011 (Expected)

Indian Institute of Technology(IIT), Guwahati, India.
B. Tech in Computer Science and Engineering
July 2002 - May 2006

Interests

- Network Design and Measurements
- Wireless Systems and Protocols
- Vehicular Networks
- Dynamic Spectrum Access Systems

Recent Projects

- **AirLab: Distributed Infrastructure for Wireless Measurements**
  In this project, lead by me, we designed, built and deployed AirLab, a distributed wireless data collection infrastructure. Our goal is to provide researchers the ability to design measurement experiments and collect consistent and comparable wireless traces from heterogeneous locations. AirLab constitutes uniformly instrumented measurement nodes coordinated by a central server, to collect traces of both standardized and user-defined experiments.
- **Effective Opportunistic Spectrum Access**
  In this project, lead by me, we performed the first comprehensive study on the presence of "usable" spectrum in opportunistic spectrum access systems. We show that, contrary to prior assumptions in literature, spectrum extracted by secondary devices is very low and cannot support traditional networking applications. To provide better spectrum extraction, we propose *frequency bundling*, where secondary devices build reliable channels by combining multiple unreliable frequencies into virtual frequency bundles.
- **Starfish: Maximizing Throughput of Roadside Infostations**
  In this work, lead by me, we designed and deployed a vehicular testbed of 4 vehicles and an infostation and collected over 200 hours of detailed highway measurements. We analyze these results to explore the design space of WiFi infostations, in order to determine whether unicast or broadcast should be used to build high-throughput infostations that scale with device density. Our insights lead to Starfish, a high-bandwidth and scalable infostation system that incorporates device-to-device data scavenging, where nearby vehicles share data received from the infostation. Starfish improves the infostation throughput by factor of 2-6.

Publications

Journals

- Vinod Kone, Mariya Zheleva, Mike Wittie, Ben Zhao, Elizabeth Belding, Haitao Zheng and Kevin Almeroth, *"AirLab: Consistency, Fidelity and Privacy in Wireless Measurements"*, SIGCOMM Computer Communication Review (CCR 2011)
- Vinod Kone, Haitao Zheng, Antony Rowstron and Ben Y.Zhao, *"The Impact of Infostation Density on Vehicular Data Dissemination"* , ACM Mobile Networking and Applications (MONET 2010).

- Vinod Kone, Sudipto Das, Ben Zhao and Haitao Zheng, *"QUORUM: Quality of Service in Wireless Mesh Networks"*, The Journal of Special Issues on Mobile Networking and Applications (MONET 08).

Conferences and Workshops

- Vinod Kone, Lei Yang, Xue Yang, Ben Y. Zhao and Haitao Zheng, *"On the Feasibility of Effective Opportunistic Spectrum Access"*, 10^{th} Internet Measurement Conference (IMC 2010), Melbourne, Australia, 2010.
- Lei Yang,Vinod Kone, Xue Yang, York Liu, Ben Y. Zhao and Haitao Zheng, *"Coexistence-Aware Scheduling for Wireless System-on-a-Chip Devices"*, Seventh Annual IEEE Communications Society Conference on Sensor, Mesh, and Ad Hoc Communications and Networks (SECON 2010), Boston, MA, 2010
- Vinod Kone, Haitao Zheng, Antony Rowstron and Ben Y.Zhao, *"On Infostation Density of Vehicular Networks"*, 5th Annual International Wireless Internet Conference (WICON 2010), Singapore, 2010 –Invited.
- Vinod Kone, Sudipto Das, Ben Zhao and Haitao Zheng, *"QUORUM: QUality Of service RoUting in wireless Mesh networks"*, 4^{th}International Conference on Heterogeneous Networking for Quality, Reliability, Security and Robustness (QShine07), Vancouver, Canada, 2007.
- Vinod Kone and Sukumar Nandi, *"QoS constrained Adaptive Routing Protocol For Mobile Adhoc Networks"*, 9^{th} International Conference on Information Technology (CITS06), Orissa, India, 2006.
- Christof Brandeur,Peter Dorfinger and Vinod Kone, *"Synchronized real time networks"*, Proceedings of the Work-in-progress session of the 27^{th} IEEE Real-Time Systems Symposium (RTSS05), Florida, 2005.
- Christof Brandeur,Peter Dorfinger and Vinod Kone, *"Synchronized Access Networks"*,4^{th} International Workshop on Real Time Networks (RTN05), Italy, 2005.

Posters

- Vinod Kone, Mariya Zheleva, Mike Wittie, Zengbin Zhang, Xiaohan Zhao, Ben Y. Zhao, Elizabeth M. Belding, Haitao Zheng, and Kevin C. Almeroth, *"AirLab: Distributed Infrastructure for Wireless Measurements"*, 7th USENIX Symposium on Networked Systems Design and Implementation (NSDI 2010), San Francisco, 2010.
- K.Vinod, Atanu Roy and S.K.Nandi, *"A Caching Mechanism To Improve The Reliability Of Multicasting In Multihop MANET"*, 13^{th} International Conference on Advanced Computing and Communications (ADCOM05), India, 2005.

PATENTS

- Vivek Jain, Badri Raghunathan and Vinod Kone, *"Dead Spot Prediction Mechanism for Wireless Vehicular Applications"*, (US Patent 20100240346), 2010.

INTERNSHIPS

- Measurement study of Mobile Broadband in trains (Research Intern, Microsoft Research Cambridge, Spring 2009)
- Deadspot Prediction for Vehicular Wireless Application (Research Intern, Bosch Research Labs, Summer 2008)

- Design and development of direct peer to peer connections for GoToMyPC (Summer Intern, Citrix Online, Summer 2007)
- Synchronized access networks for real time distributed systems (Research Intern, Salzburg Research Center, Austria, Summer 2005)

Skills

Languages C, C++, C#, Perl, Java

Software MATLAB, Qualnet, NS-2

OS Linux/Unix and Windows

Honors and Awards

- Recipient of Citrix Online Graduate Fellowship for the year 2006-07.
- University of Illinois Wireless Summer School Fellowship
- Recipient of Pratibha Merit Scholarship during under-graduation 2002-06.