

# Kotaro Kataoka

## 1 Contact Detail

---

---

Address	Dept. of Computer Science and Engineering, Indian Institute of Technology Hyderabad Ordnance Factory Estate, Yeddumailaram 502205 Telangana, India
Telephone	+91 40 2301 6077 (Land Line), +91 738 206 1295 (Mobile)
Email	kotaro@iith.ac.in

---

## 2 Work Experience

---

Term	Job Title	Affiliation
July 2012 to Present	Visiting Assistant Professor	Indian Institute of Technology Hyderabad
July 2012 to Present	JICA Expert	Japan International Cooperation Agency
April 2010 to June 2012	Project Assistant Professor	Keio University
Funding: DISANET Project, JST/JICA SATREPS		
April 2009 to March 2010	Researcher	Keio University
Funding: Co-mobility Project, Special Coordination Fund for Promoting Science and Technology		
April 2008 to March 2010	Part-time Lecturer	Chiba University of Commerce
April 2004 to March 2006	Research Assistant	Keio University
Funding: Next Generation Media and Intelligent Social Infrastructure, 21st Century COE Program		

---

## 3 Teaching Experience

---

Semester	Course Title	University
AUGUST 2012, 2013, 2014	Computer Networks (CS3040)	IIT Hyderabad
AUGUST 2012, 2013, 2014	Computer Networks Lab (CS3041)	IIT Hyderabad
JANUARY 2013, 2014, 2015	Network Engineering (CS5113) [*]	IIT Hyderabad
JANUARY 2014, 2015	Topics in Networks (CS6220) [**]	IIT Hyderabad

---

[\*] CS5113 is a hands-on-only course using commercial routers, switches and virtual networks. This course provides real experience of network engineering that covers Cabling, Wireless Networks, VLAN Management, IPv4/v6 Addressing, Network Configuration at End Systems, Network Topology, Intra-AS Routing, Inter-AS Routing and Traffic Control, Multicast Routing and Video Streaming, Benchmarking and Monitoring, Security, Designing Enterprise Networks.

[\*\*] CS6220 is a hands-on and research oriented course. This course primarily explores the recent advances in core computer networking technologies and/or mobile wireless networks like Software Defined Networking, Future Internet, Cloud RAN, 5G, Convergence of Heterogeneous Wireless Technologies, M2M/IoT, etc. The objective is to discuss in depth some of the key advances from the literature, propose extensions, implement them on a testbed/NS-3 platform, and publishing the results.

---

## 4 Education

- Ph.D. Thesis: "IP Network Architecture over Unidirectional Broadcast Media", Graduate School of Media and Governance, Keio University, 2010.

- Master Thesis: "Design of the Autonomous Satellite Link Operation Environment on the Internet", Graduate School of Media and Governance, Keio University, 2004.
- Bachelor Thesis: "A packet aggregation system for multicast data delivery over satellite-based Internet", Faculty of Environment and Information Studies, Keio University, 2002. (in Japanese)

## 5 Publications

### 5.1 Papers Under Review

- "AMPF: Application-aware Multipath Packet Forwarding using Machine Learning and SDN"
- "Auto-Configuration of SDN Switches in SDN/Non-SDN Hybrid Network"
- "SAFE: Software-defined Authentication Framework"
- "liteFlow: Lightweight and Distributed Flow Monitoring Platform for SDN"
- "A Self-contained Software Suite for Post-Disaster ICT Environment using Linux Live USB"

### 5.2 Refereed Journals

- Kotaro Kataoka, Keisuke Uehara, Masafumi Oe, Jun Murai, "Design and Deployment of Post-Disaster Recovery Internet in 2011 Tohoku Earthquake", Special Section: Future Internet Technologies against Present Crises, IEICE TRANSACTIONS on Communications, Vol.E95-B, No.7, pp.2200-2209, 2012.
- Kotaro Kataoka, Achmad Husni Thamrin and Jun Murai, "A Scalable Network Architecture for a Large-scale Uni-directional Link", Journal of Information Processing, Vol.51, No.3, pp.125-137, 2010.
- Kotaro Kataoka, Hiroaki Kimura, Takaaki Ishida, Hiroyuki Ohara, Shingo Izawa, Hiroyuki Kusumoto, Osamu Kakamura and Jun Murai, "An Architecture of IP Network over Broadcast Media", Journal of the Institute of Electronics, Information and Communication Engineers, Vol.J91-B, No.12, pp.1669-1681, 2008. (in Japanese)
- Shunsuke Fujieda, Haruhito Watanabe, Kotaro Kataoka and Achmad Husni Thamrin, "WIDE Project and Research Trends of Internet Technologies: Communication Backbone in Asia and Satellite Internet", Journal of Information Processing, Vol.46, No.8, pp.872-878, 2005. (in Japanese)

### 5.3 International Conferences

- Deepak Bhardwaj, Kotaro Kataoka and Vikash Kumar, "Wi-Pi: Distributed Wi-Fi Performance Assessment Using Raspberry Pi", In Proceedings of ACM Asian Internet Engineering Conference 2014 (AINTEC '14), pp.31-36, 2014. (Finalist for Best Paper Award)
- Rishu Agrawal, Aradhya Biswas and Kotaro Kataoka, "Antaryami: Managing Device-wise High-level Activity in Enterprise Network", ACM Asian Internet Engineering Conference 2014 (AINTEC '14), 2014. (Poster Session)
- Kotaro Kataoka, Nitin Agarwal and Aditya V Kamath, "Scaling a Broadcast Domain of Ethernet: Extensible Transparent Filter using SDN", In proceedings of IEEE 23rd International Conference on Computer Communication and Networks (ICCCN), pp.457-464, 2014.

- D. Jalihal, R. D. Koilpillai, P. Khawas, S. Sampooram, Sree Hari Nagarajan, S. Kalpalatha, R. Bhavani Keiji Takeda and Kotaro Kataoka, "A Stand-alone Quickly-Deployable Communication System for Effective Post-Disaster Management", In proceedings of IEEE Region 10 Humanitarian Technology Conference 2014 (R10 HTC), pp.53-58, 2014.
- Shaik A. Ahammed, Karthik Badam, Guddanti V. Bhaskar, Sumit Chhuttani, Anuj Gangwar, Vaibhav Garg, Lokesh Gupta, Anubhav K. Jain, Rohit Jindal, Neeraj Kumar, Kiran K. Manku, Vijay K. Midde, Malempati Nagarjuna, Rahul Patil, Saurabh Singh, Nallapu Sneha, Praveen B. Srinivas, Mudit Tanwani, Sameer Wasnik, Ravindra Guravannavar, Subrahmanyam Kalyanasundaram, Kotaro Kataoka, M V Panduranga Rao and Naveen Sivadasan, "Acquisition, Storage, Retrieval and Dissemination of Disaster Related Data", In proceedings of IEEE Region 10 Humanitarian Technology Conference 2014 (R10 HTC), pp.121-126, 2014.
- Anubhav Kumar Jain, Vaibhav Garg, Karthik Badam and Kotaro Kataoka, "A Smartphone Application for Victim Information Gathering and Exchange in Post-Disaster Situation", ACM ASIAN INTERNET ENGINEERING CONFERENCE (AINTEC) 2012, 2012. (Poster Session)
- D. Jalihal, R. D. Koilpillai, P. Khawas, S. Sampooram, S. H. Nagarajan, K. Takeda, K. Kataoka, "A Rapidly Deployable Disaster Communications System for Developing Countries", IEEE ICC2012 Workshop on Re-think ICT infrastructure designs and operations (RIDO), pp.7907-7911, 2012.
- Noriatsu Kudo, Kotaro Kataoka and Jun Murai, "On Operational Scheme for Remote Lectures in Inter-university Distance Learning Project", CSEDU 2011, pp.249-257, 2011.
- Kotaro Kataoka and Achmad Husni Thamrin, "Practical Approach on Deploying IPv6 Multicast Using Wireless Mesh Technologies", AsiaFI 2010 Summer School, 2010. (Poster Session)
- Kotaro Kataoka, Achmad Husni Thamrin, Kenjiro Cho, Jun Takei and Jun Murai, "Architecture of Satellite Internet for Asia-wide Digital Communications", AINTEC 2007, Springer LNCS, Vol.4866/2007, pp.242-255, 2007.
- Kotaro Kataoka, Haruhito Watanabe and Jun Murai, "Data Link Monitoring on the Satellite-Based Network in the Internet", Proceedings of SAINT Workshops 2003, pp.35-40, 2003.

#### 5.4 Patents

- H. Kimura, S. IZAWA, T. Ishida, and K. Kataoka. Content sending apparatus, content receiving apparatus, content sending method and content receiving method, February 2 2011. CN Patent 101,273,561.
- H. Kimura, S. IZAWA, T. Ishida, and K. Kataoka. Content transmitting apparatus, content receiving apparatus, content transmitting method, and content receiving method, December 13 2011. US Patent 8,077,715.
- H. Kimura, S. IZAWA, T. Ishida, and K. Kataoka. Relay apparatus, communication terminal, and communication method, March 6 2012. US Patent 8,130,691.
- H. Kimura, S. IZAWA, T. Ishida, and K. Kataoka. Relay unit, communication terminal and communication method, May 1 2013. CN Patent 101,283,554.

- H. Kimura, S. IZAWA, T. Ishida, and K. Kataoka. Information communication apparatus, information transmitting apparatus, and information communication method, April 16 2013. US Patent 8,422,498.
- H. Kimura, S. IZAWA, T. Ishida, and K. Kataoka. Information transmitter, information sending device, and information transmission method, May 1 2013. CN Patent 101,411,101.
- J. Murai, T. Ishida, K. Kataoka, H. Kimura, and S. IZAWA. Broadcast content transmission apparatus and broadcast content transmission method, November 23 2011. CN Patent 101,433,089.
- J. Murai, T. Ishida, K. Kataoka, H. Kimura, and S. IZAWA. Broadcast-content transmission apparatus, and broadcast-content transmission method, February 25 2014. US Patent 8,660,123.

## 5.5 Domestic Conferences

- Yukito Ueno, Katsuhiro Horiba, Kotaro Kataoka, "Design and Implementation of Software LISP Router", Work in Progress, Proceedings of Internet Conference 2011, pp.125-126, 2011.
- Noriatsu Kudo, Kotaro Kataoka and Hideyuki Tokuda, "Constructing a Distance Lecture Environment for Advanced IT Specialist Program", Proceedings of Japanese Society for Information and Systems in Education Conference, Vol.25, No.3, pp.23-30, 2010.
- Kotaro Kataoka, Keisuke Uehara and Jun Murai, "LifeLine Station: A Quickly Deployable Package for Post Disaster Communications", Proceedings of Internet Conference 2009, pp.41-47, 2009.

## 5.6 Annual Reports

- Kotaro Kataoka, "Development of Communication Infrastructure for Disaster Situations", Part 1, Chapter 3, Annual Report of WIDE Project 2011, 2012.
- Takashi Tomine, Takehiro Sugita, Hajime Tazaki, Hirochika Asai, Miyoko Kumaki, Rei Atarashi, Yoshihiro Okamoto, Kotaro Kataoka, Toshiaki Hatano, Fumio Teraoka, Yuichiro Tahara and Ryo Nakamura, "Design, Deployment and Operation of Large-scale Temporary Network Testbed", Part 32, Annual Report of WIDE Project 2010, 2011.
- Achmad Basuki, Achmad Husni Thamrin, Dikshie Fauzie, Kotaro Kataoka, Niswar Muhammad and Teruaki Yokoyama, "Asian Internet Interconnection Initiatives", Part 29, Annual Report of WIDE Project 2010, 2011.
- Kotaro Kataoka and Keisuke Uehara, "Development of Communication Infrastructure for Disaster Situations", Part 18, Annual Report of WIDE Project 2010, 2011. (in Japanese)
- Achmad Basuki, Achmad Husni Thamrin, Dikshie Fauzie, Kotaro Kataoka, Niswar Muhammad and Teruaki Yokoyama, "Asian Internet Interconnection Initiatives", Part 27, Annual Report of WIDE Project 2009, 2010.
- Kotaro Kataoka, "Development of Communication Infrastructure for Disaster Situations", Part 17, Annual Report of WIDE Project 2009, 2010.
- Achmad Husni Thamrin, Kotaro Kataoka, Niswar Muhammad and Teruaki Yokoyama, "Asian Internet Interconnection Initiatives", Part 23, Annual Report of WIDE Project 2007, 2008.

- Achmad Basuki, Achmad Husni Thamrin, Ang Way Chuang, Harry Soekotjo, Kanchana Kanchanasut, Kotaro Kataoka, Umar Darmadji and Teruaki Yokoyama, "Asian Internet Interconnection Initiatives", Part 29, Annual Report of WIDE Project 2006, 2007.
- Masafumi Oe, Nobuo Ogashiwa, Kotaro Kataoka, Keiichi Shima, Mio Suzuki and Teruaki Yokoyama, "Design, Deployment and Operation of Large-scale Temporary Network Testbed", Part 35, Annual Report of WIDE Project 2005, 2006. (in Japanese)
- Kotaro Kataoka, "Operation of VSAT Satellite Communication System for the Internet", Part 1, Annual Report of WIDE Project 2005, 2006. (in Japanese)
- Masafumi Oe, Kotaro Kataoka, Zul Hilmi Zulkifli, Jun Takei and Soh Yamamoto, "Operation of VSAT Satellite Communication System for the Internet", Part 2, Annual Report of WIDE Project 2004, 2005. (in Japanese)
- Hidetaka Izumiyama, Intan Ahmad, Takeshi Usui, Kotaro Kataoka, Tan Chen Wei, Denis F. Villorente, Tran Ba Thai, Shunsuke Fujieda, Pensri. A, Teruaki Yokoyama, Haruhito Watanabe and Wan Tat Chee, "Asian Internet Interconnection Initiatives", Part 29, Annual Report of WIDE Project 2003, 2004.
- Masafumi Oe, Kotaro Kataoka, Jun Takei, Soh Yamamoto, "Operation of VSAT Satellite Communication System for the Internet", Part 2, Annual Report of WIDE Project 2003, 2004. (in Japanese)
- Takeshi Usui, Kotaro Kataoka, Takahiro Kikuchi, Hiroyuki Kusumoto and Naohiro Shichijo, "Multicast Communications", Part 8, Annual Report of WIDE Project 2001, 2002. (in Japanese)
- Mikiyo Nishida, Haruhito Watanabe, Ayumu Yasuda, Shunsuke Fujieda, Hidetaka Izumiyama, Kotaro Kataoka and Miyoko Kumaki, "Field Tests on Networking Using Satellite Communication", Part 7, Annual Report of WIDE Project 2001, 2002. (in Japanese)

## 5.7 Miscellaneous Publications and Presentations

- Noriatsu Kudo, Kotaro Kataoka, Keiko Okawa, Osamu Nakamura and Jun Murai, "Construction and Operation of Space Shared Multi-Classroom Remote Lecture Environment", KEIO SFC JOURNAL, Vol.11, No.2, pp.155-166, 2012.
- Kotaro Kataoka, "Post-disaster Recovery Internet and DISANET Project", Network Engineering Workshop, APAN Meeting, Delhi, 2011.
- Way-Chuang Ang, Tat-Chee Wan, Kotaro Kataoka and Chee-Hong Teh, "Performance Evaluation of RObust Header Compression (ROHC) over Unidirectional Links using DVB-S Testbed", KEIO SFC JOURNAL, Vol.8, No.2, pp.21-36, 2008.
- Kotaro Kataoka and Takaaki Ishida, "IP over Digital Broadcast: Overview and Technology", Information Communications BULLETIN, KDDI Engineering and Consulting, Inc., Vol.55, pp.1-5, 2007. (in Japanese)

## 6 Grants

### 6.1 Sponsored Projects

Term	Project Name	Sponsor Institute	Amount
2014	Avatar: Real-time Online Counseling System for Mental Health Care (Approved) Chief Investigators: Dr. C. Krishna Mohan, Dr. Mahati Chittem	DEITY, GoI	2.25 Cr. INR
2008	Evaluation of IP Transmission Performance over Terrestrial Digital Broadcast Project Representative: Kotaro Kataoka	Mori Fund, Keio University	100,000 JPY
2002	Development of International Backbone Network using Satellite Communications Project Representative: Prof. Jun Murai	Mori Fund, Keio University	990,000 JPY

### 6.2 Consultancy Projects

Term	Project Name	Partner Institute	Amount
October 2004 to February 2005	IP Extension for Terrestrial digital broadcasting (IPETdb) Project Representative: Prof. Jun Murai	KDDI Cooperation	2,100,000 JPY
October 2005 to March 2006	IP Extension for Terrestrial digital broadcasting (IPETdb) Project Representative: Prof. Jun Murai	KDDI Cooperation	4,200,000 JPY
August 2005 to January 2007	IP Extension for Terrestrial digital broadcasting (IPETdb) Project Representative: Prof. Jun Murai	KDDI R&D Laboratories	2,100,000 JPY

### 6.3 Community Contributions

#### 6.3.1 Chairing Working Groups

Term	Description	Role
2008 - 2014	WIDE Project LLS Working Group	Chair
2007 - 2010	AI <sup>3</sup> Project UDL Working Group	Co-chair
2002 - 2006	WIDE Project DVB-RCS Working Group	Co-chair

### 6.3.2 Conferences and Workshops

Term	Description	Role
2015	International Workshop on Digital Fabrication 2015 (India)	Organizing Committee
2013	Workshop on Cyber-Physical Systems: Applications and Open Challenges (India)	Organization Committee
2010	WIDE Project Biannual Meeting (Japan)	Chair
2008	SOI Asia Operator Workshop (Online)	Lecturer
2006	SOI Asia Operator Workshop (Online)	Lecturer
2005	SOI Asia Operator Workshop (Online)	Lecturer
2005	WIDE Project Biannual Meeting (Japan)	Chair (Network)
2004	SOI Asia Operator Workshop (Indonesia, Thailand)	Chair, Lecturer
2004	AI <sup>3</sup> /SOI Asia Biannual Meeting (Philippines)	Chair
2003	SOI Asia Realtime ASEAN Interaction (Myanmar)	Operator
2002	SOI Asia Operator Workshop (Japan)	Assistant

## 7 References

Name	Jun Murai
Title	Dean and Professor
Address	Faculty of Environment and Information Studies, Keio University 5322 Endo, Fujisawa, Kanagawa 252-0882, Japan
Telephone	+81-466-49-3529
E-mail	jun@sfc.keio.ac.jp

Name	Hiroshi Esaki
Title	Professor
Address	Graduate School of Information Science and Technology, The University of Tokyo 102A2, 7-3-1 Hongo, Bunkyo-ku, Tokyo 113-8656, Japan
Telephone	+81-3-5841-7465
E-mail	hiroshi@wide.ad.jp

Name	R. David Koilpillai
Title	Professor
Address	Department of Electrical Engineering, Indian Institute of Technology Madras Chennai 600 036, India
Telephone	+91-44-2257-4405
E-mail	koilpillai@ee.iitm.ac.in