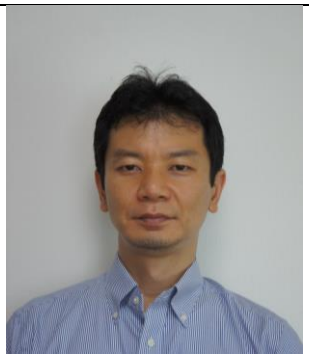
Requests for Collaboration

Name: Kota Abe, Ph.D.
Current position: Professor
E-mail address: k-abe@osaka-cu.ac.jp



Research Interests

- Distributed Systems
- System Software

Creative Achievements in The Application of New and Existing Science and Technology

(1) Distributed algorithms for scalable and stable peer-to-peer networks. Examples are as follows: (a) A novel decentralized algorithm *DDLL* that constructs distributed and sorted doubly linked lists. DDLL maintains consistency with regard to lookups of nodes even while multiple nodes are simultaneously being inserted and deleted. DDLL does not require distributed locking thus does not require complicated recovery procedure from failure. (b) A DDLL-based structured P2P network *Suzaku*, which has good scalability and less maintenance overhead. (c) A distributed algorithm for scalable aggregation query such as MIN, MAX, AVERAGE over values stored by distributed nodes.

(2) A Web browser-based P2P network, which uses WebRTC as an inter-browser transport, is proposed and implemented. Because this network does not require users to install P2P applications, its use is quite straightforward. The implementation includes structured P2P network that supports failure recovery, scalable node lookup, scalable range queries and multicasting, replicated distributed storage, etc.

Technology (Product, Process, Device, Service etc.) That I Want to Request for Collaboration

- Applications of Web browser-based P2P network, including collaborative web caching, Serverless micro blog service, Serverless ad-hoc contents distribution systems, etc.

A List of 5 Key Publications

- K. Abe and M. Yoshida: Constructing Distributed Doubly Linked Lists without Distributed Locking, In Proceeding of the IEEE International Conference on Peer-to-Peer Computing 2015 (P2P 2015), (2015).
- K. Abe, T. Abe, T. Ueda, H. Ishibashi and T. Matsuura: Aggregation Skip Graph: A Skip Graph Extension for Efficient Aggregation Query over P2P Networks, International Journal On Advances in Internet Technology, Vol. 4, No. 3 and 4, pp.103--110, IARIA, (2012).
- K. Abe, T. Abe, T. Ueda, H. Ishibashi and T. Matsuura, Aggregation Skip Graph: A Skip Graph Extension for Efficient Aggregation Query, In Proceeding of the 2nd International Conference on Advances in P2P Systems (AP2PS 201), pp. 93–99, (2010).
- M. Shikano, K. Abe, T. Ueda, H. Ishibashi and T. Matsuura: Constructing a Stable Virtual Peer from Multiple Unstable Peers for Fault-tolerant P2P Systems, International Journal On Advances in Networks and Services, Vol. 3, No. 1 and 2, pp.199--208, IARIA, (2010).
- K. Abe, T. Ueda, M. Shikano, H. Ishibashi and T. Matsuura, Toward Fault-tolerant P2P Systems: Constructing a Stable Virtual Peer from Multiple Unstable Peers, In Proceeding of the 1st international Conference on Advances in P2P Systems (AP2PS 2009), pp. 104–110 (2009).