Naoto Ohsaka

Curriculum Vitae
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Personal and contact information

Name:	Naoto Ohsaka
Citizenship:	Japan
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Education

March 2018	Doctor of Information Science and Technology, Department of Computer Science, Graduate School of Information Science and Technology, the University of Tokyo *Title*: Efficient and Effective Identification of Influential Vertices in Social Networks *Supervisor*: Professor H. Imai
March 2015	Master of Information Science and Technology, Department of Computer Science, Graduate School of Information Science and Technology, the University of Tokyo *Title*: Estimating and Maximizing the Spread of Influence in Social Networks: Pruned Monte-Carlo Simulations and Fully-Dynamic Indices *Supervisor*: Professor H. Imai
March 2013	Bachelor of Engineering, Department of Computer Science, the University of Electro-Communications *Title*: Study on Improving the Performance of a Streaming Algorithm for the k-means Problem *Supervisor*: Professor M. Muramatsu
March 2011	Graduated from Tokyo National College of Technology

Professional experience

April 2013–March 2016	Research assistant of the Complex Network and Map Graph Group, JST, ERATO, Kawarabayashi Large Graph Project

Referee

1. Conference referee: AAAI'16 (subreviewer*1)
2. Journal reviewer: IEICE Transactions on Information and Systems (2015*1, 2018*1), IEEE Access (2019*1)

Honors and awards

November 2012   3rd Place (with Izuru Matsuura and Masafumi Yabu), ACM International Collegiate Programming Contest Asia Regional Contest 2012 in Tokyo, Tokyo, Japan

July 2013   14th Place (with Izuru Matsuura and Masafumi Yabu), ACM International Collegiate Programming Contest World Finals 2013, St. Petersburg, Russia

March 2014   Excellent Paper Award (with Takuya Akiba, Yuichi Yoshida, and Ken-ichi Kawarabayashi), the 6th Forum on Data Engineering and Information Management, Hyogo, Japan

March 2014   Student Presentation Award, the 6th Forum on Data Engineering and Information Management, Hyogo, Japan

May 2015   Poster presentation award, the 29th Annual Conference of the Japanese Society for Artificial Intelligence, Hokkaido, Japan

Publications

1. <u>Naoto Ohsaka</u>, Daisuke Kitakoshi, and Masato Suzuki. **A Reinforcement Learning Method to Improve the Sweeping Efficiency for an Agent**. *Proceedings of the 2011 IEEE International Conference on Granular Computing (GrC)*, pp. 515–520, 2011.

2. <u>Naoto Ohsaka</u>, Takuya Akiba, Yuichi Yoshida, and Ken-ichi Kawarabayashi. **Fast and Accurate Influence Maximization on Large Networks with Pruned Monte-Carlo Simulations**. *Proceedings of the 28th AAAI Conference on Artificial Intelligence (AAAI)*, pp. 138–144, 2014.

3. <u>Naoto Ohsaka</u>, Takanori Maehara, and Ken-ichi Kawarabayashi. Efficient PageRank Tracking in Evolving Networks. *Proceedings of the 21st ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, pp. 875–884, 2015.

4. <u>Naoto Ohsaka</u> and Yuichi Yoshida. **Monotone k-Submodular Function Maximization with Size Constraints**. *Proceedings of the 29th Annual Conference on Neural Information Processing Systems (NIPS)*, pp. 694–702, 2015.

5. <u>Naoto Ohsaka</u>, Takuya Akiba, Yuichi Yoshida, and Ken-ichi Kawarabayashi. **Dynamic Influence Analysis in Evolving Networks**. *Proceedings of the VLDB Endowment, (PVLDB)*, 9(12), pp. 1077–1088, 2016.

6. <u>Naoto Ohsaka</u>, Yutaro Yamaguchi, Naonori Kakimura, and Ken-ichi Kawarabayashi. **Maximizing Time-Decaying Influence in Social Networks**. *Proceedings of the 15th European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML PKDD)*, pp. 132–147, 2016.

7. <u>Naoto Ohsaka</u> and Yuichi Yoshida. **Portfolio Optimization for Influence Spread**. *Proceedings of the 26th International Conference on World Wide Web (WWW)*, pp. 977–985, 2017.

8. <u>Naoto Ohsaka</u>, Tomohiro Sonobe, Sumio Fujita, and Ken-ichi Kawarabayashi. **Coarsening Massive Influence Networks for Scalable Diffusion Analysis**. *Proceedings of the 2017 ACM SIGMOD International Conference on Management of Data (SIGMOD)*, pp. 635–650, 2017.

9. Yoichi Iwata, Tomoaki Ogasawara, and <u>Naoto Ohsaka</u>. **On the Power of Tree-Depth for Fully Polynomial FPT Algorithms**. *Proceedings of the 35th International Symposium on Theoretical Aspects of Computer Science (STACS)*, pp. 41:1–41:14, 2018.

10. Diana Popova, <u>Naoto Ohsaka</u>, Ken-ichi Kawarabayashi, and Alex Thomo. **NoSingles: a Space-Efficient Algorithm for Influence Maximization**. *Proceedings of the 30th International Conference on Scientific and Statistical Database Management (SSDBM)*, pp. 18:1–18:12, 2018

11. Naoto Ohsaka, Tomohiro Sonobe, Naonori Kakimura, Takuro Fukunaga, Sumio Fujita, and Ken-ichi Kawarabayashi. **Boosting PageRank Scores by Optimizing Internal Link Structure**. *Proceedings of the 29th International Conference on Database and Expert Systems Applications (DEXA)*, pp. 424–439, 2018.

Presentations

November 2011	Oral presentation of Publication 1 in Kaohsiung, Taiwan
July 2014	Oral and poster presentation of Publication 2 in Québec, Canada
August 2015	Oral and poster presentation of Publication 3 in Sydney, Australia

December 2015	Poster presentation of Publication 4 in Montréal, Canada
September 2016	Oral and poster presentation of Publication 5 in New Delhi, India
September 2016	Oral and poster presentation of Publication 6 in Riva del Garda, Italy
April 2017	Oral presentation of Publication 7 in Perth, Australia
May 2017	Oral and poster presentation of Publication 8 in Chicago, USA
September 2018	Oral presentation of Publication 11 in Regensburg, Germany

Research interests

Graph algorithms, network diffusion, submodular functions, machine learning, optimization

Skills

Programming languages (C/C++, Java, Ruby, Python)