

# Naoki Otani

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## EDUCATION

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† *Indicates expected*

- 2017–2019 † Master of Science in Language Technologies, Carnegie Mellon University
- 2015–2017 Master of Informatics, Kyoto University, Japan  
Thesis: “Commonsense Knowledge Acquisition via a GWAP on a Dialogue System”  
Supervisor: Sadao Kurohashi
- 2011–2015 Bachelor of Engineering, Kyoto University, Japan  
Thesis: “Quality Control of Hierarchical Crowdsourced Classification”  
Supervisor: Hisashi Kashima

## EXPERIENCE

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- Aug.–Oct. 2016 **Research Intern** *Microsoft Research Asia, Beijing, China*  
Analyzed microblogs and developed a paraphrasing tool for chat-bots
- Apr.–Aug. 2016 **Teaching Assistant** *Kyoto University, Kyoto, Japan*  
Taught C programming to undergraduate students and rated their assignments.
- Feb. 2016 **Research Intern (part time)** *Yahoo Japan Corporation, Tokyo, Japan*  
–Feb. 2017 Developed a GWAP (game with a purpose) for acquiring knowledge. The game was published on a widely-used spoken dialogue system, *Yahoo! Voice Assist*.
- Sep. 2015 **Research Intern** *IBM Research - Tokyo, Tokyo, Japan*  
Studied acronym disambiguation on biomedical papers using network structures and processed a massive network with millions of nodes.
- Aug. 2015 **Software Engineer** *Kyoto University, Kyoto, Japan*  
Organized the Machine Learning Summer School (MLSS) [Predictive Model Challenge](#). Developed a competition platform and prepared datasets for the competition.
- Apr.–Aug. 2015 **Teaching Assistant** *Kyoto University, Kyoto, Japan*  
Taught C programming to undergraduate students and rated their assignments.

## RESEARCH PROJECTS

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|-----------|--|--------------------------------|
| 2017      | <b>Translating Commonsense Knowledge Base</b>  | <i>Kyoto University</i>        |
|           | <ul style="list-style-type: none"><li>• Translating a large English knowledge base into Japanese (low resource language).</li><li>• Combining a machine translation model and a knowledge base completion model to disambiguate interlanguage links.</li></ul>   |                                |
| 2015–2017 | <b>Commonsense Knowledge Acquisition via a GWAP on a Dialogue System</b>   | <i>Kyoto University</i>        |
|           | <ul style="list-style-type: none"><li>• Developed a GWAP on a spoken dialogue system on smartphones for acquiring commonsense knowledge.</li><li>• Worked closely with researchers and engineers from Yahoo Japan Corporation.</li><li>• Collected about 200,000 types of commonsense knowledge from 100,000 players within a year.</li><li>• Related publication: <a href="#">[4]</a></li></ul> |                                |
| 2016      | <b>Paraphrasing for Chat-bots</b>  | <i>Microsoft Research Asia</i> |
|           | <ul style="list-style-type: none"><li>• Studied casual Japanese expressions used on Twitter.</li><li>• Developed a rule-based method for translating casual expressions into formal expressions in Japanese.</li></ul>   |                                |
| 2016      | <b>Crowdsourcing for Evaluating Machine Translation Systems</b>  | <i>Kyoto University</i>        |
|           | <ul style="list-style-type: none"><li>• Proposed an unsupervised statistical model for aggregating many pairwise comparisons of machine translations.</li><li>• Related publication: <a href="#">[2]</a></li></ul>   |                                |
| 2014–2015 | <b>Quality Control of Hierarchical Crowdsourced Classification</b>   | <i>Kyoto University</i>        |
|           | <ul style="list-style-type: none"><li>• Produced a statistical unsupervised learning method for quality control of crowdsourced classification.</li><li>• Investigated statistical models in item response theory and extended the model for crowdsourcing.</li><li>• Related publications: <a href="#">[1]</a>, <a href="#">[3]</a></li></ul>   |                                |

## AWARDS

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| 2017–2019 | Funai Overseas Scholarship  |
|           | Full amount of tuition for two years. 9 out of 109 applicants were awarded.                     |
| 2016      | Award of Excellence, Internship program at Microsoft Research Asia                              |
| 2016      | Student Scholarship, EMNLP2016  |
| 2015      | Kyoto University Design School Award, “Lyric Generation with Deep learning” (joint work)        |
|           | Awarded at Hack U Kyoto University 2015 hosted by Yahoo Japan Corporation and Kyoto University. |

## SKILLS

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| Computing | Python, C/C++, Shell script, R                                     |
| Language  | Japanese (native), English (fluent), Chinese-Mandarin (conversant) |

## PUBLICATIONS

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### Journal

- [1] **Naoki Otani**, Yukino Baba, and Hisashi Kashima. 2016. Quality Control of Crowdsourced Classification Using Hierarchical Class Structures. *Expert Systems with Applications (ESWA)*, 58:155–63. <http://doi.org/10.1016/j.eswa.2016.04.009>

### Conferences

- [2] **Naoki Otani**, Toshiaki Nakazawa, Daisuke Kawahara, and Sadao Kurohashi. 2016. IRT-based Aggregation Model of Crowdsourced Pairwise Comparison for Evaluating Machine Translations. In *Proceedings of the 2016 Conference on Empirical Methods in Natural Language Processing (EMNLP)*, pages 511–20, Austin, Texas, USA, November. Association for Computational Linguistics. <http://www.aclweb.org/anthology/D/D16/D16-1049.pdf>
- [3] **Naoki Otani**, Yukino Baba, and Hisashi Kashima. 2015. Quality control for crowdsourced hierarchical classification. In *Proceedings of 2015 IEEE International Conference on Data Mining (ICDM)* (short), pages 937–42, Atlantic City, New Jersey, USA, November. IEEE. <http://doi.org/10.1109/ICDM.2015.83>

### Workshop

- [4] **Naoki Otani**, Daisuke Kawahara, Sadao Kurohashi, Nobuhiro Kaji, and Manabu Sassano. 2016. Large-Scale Acquisition of Commonsense Knowledge via a Quiz Game on a Dialogue System. In *Proceedings of Open Knowledge Base and Question Answering (OKQBA) Workshop*, pages 11–20, Osaka, Japan, December. The COLING 2016 Organizing Committee. (Workshop at COLING). <http://www.aclweb.org/anthology/W/W16/W16-4402.pdf>

## REFERENCES

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Available on request.