

Tomohiro Nagashima

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EDUCATION

- 2017 – 2022
 (expected) **Ph.D. in Human-Computer Interaction**
 Carnegie Mellon University, Pittsburgh, PA
 Advisor: Vincent Aleven
- Dissertation: *Promoting Learners' Self-Regulated Choices with Visual Representations in an Intelligent Tutoring System*
 Committee: Vincent Aleven (Chair), Geoff Kaufman, Amy Ogan, Martha W. Alibali, & Timothy Nokes-Malach
- 2017 – 2020 **M.S. in Human-Computer Interaction**
 Carnegie Mellon University, Pittsburgh, PA
 Advisor: Vincent Aleven
- 2016 – 2017 **M.A. in Education (Learning, Design, and Technology)**
 Stanford Graduate School of Education, Stanford, CA
 Advisor: Candace Thille
- 2010 – 2014 **B.A. in Education**
 International Christian University, Tokyo, JAPAN
 Advisor: Insung Jung

FELLOWSHIPS & AWARDS

- 2021 **Presidential Fellowship**, Carnegie Mellon University School of Computer Science
- 2021 **Best Design Paper Nomination**, International Society of the Learning Sciences (ISLS2021) for [C9]
- 2020 **Fred Mulder Best Open Education Practice Award (USD\$1,300)**, Global OER Graduate Network (GOGN) for [C12] & [C13]
- 2020 **Nova Southeastern Award for Outstanding Practice in Instructional Design (USD\$75)**, Association for Educational Communications and Technology (AECT) for [C12] & [C13]
- 2019 **Doctoral Consortium Fellowship (USD\$1,000)** (Travel fellowship for LAK19), Society for Learning Analytics Research
- 2018 **Virtually Connecting Scholarship (USD\$500)** (Travel scholarship for OpenEd18), Virtually Connecting
- 2018 **Open Education Award of Excellence** (Category: Open Courses), Open Education Consortium
- 2018 **Open Education Award of Excellence Honorable Mention** (Category: Open Policy), Open Education Consortium
- 2018 **Creative Commons Summit 2018 Travel Scholarship (USD\$700)**, Creative Commons
- 2017 **Creative Commons Summit 2017 Travel Scholarship (USD\$700)**, Creative Commons
- 2016 **OER Research Fellowship (USD\$4,000)**, Open Education Group
- 2016 **Study Abroad Scholarship (USD\$30,000)**, Rotary International
- 2016 **Merit-based Tuition Fellowship (USD\$10,000)**, Stanford Graduate School of Education
- 2013 **Study Abroad Scholarship (USD\$90,000)**, Japan Business Federation
- 2011-12 **Dean's List**, International Christian University

GRANTS RECEIVED

- 2020 - 2023 **Japan Society for the Promotion of Science** (Grant-in-Aid for Scientific Research: B)
 Title: Developing data-informed OER improvement system

Co-PI with Katsusuke Shigeta, Toshiyuki Takeda, Daisuke Kaneko, and Hidefumi Yagi
Award Amount: JPY 15,990,000 (USD\$ 141,701)

2015 – 2019

Japan Society for the Promotion of Science (Grant-in-Aid for Scientific Research: B)
Title: Leveraging learning analytics to improve teaching and learning with MOOC
Co-PI with Katsusuke Shigeta, Toshiyuki Takeda, Hideki Mori, Daisuke Kaneko, Yasuhiro Hayashi, and Hidefumi Yagi
Award Amount: JPY 13,260,000 (USD\$ 117,510)

PEER-REVIEWED PUBLICATIONS (an asterisk (*) denotes a mentored student)

Journal Articles

- J1. Nagashima, T. & Hrach, S. (2021). Motivating factors among university faculty for adopting Open Educational Resources: Incentives matter. *Journal of Interactive Media in Education*, 1(19), 1-10. [[URL](#)]
- J2. Yang, K., Nagashima, T., *Yao, J., Williams, J. J., Holstein, K., & Alevan, V. (2021). Can crowds customize instructional materials with minimal expert guidance?: Exploring teacher-guided crowdsourcing for improving hints in an AI-based tutor. *ACM Conference on Computer-Supported Collaborative Work and Social Computing (CSCW2021)*. [[URL](#)]
- J3. Shigeta, K., Yagi, H., Nagashima, T., Hamada, M., Miyazaki, T., Kobayashi, K., & Shima, M. (2015). Cooperative liberal arts education and flipped classroom implementation with MOOC. *Journal of Digital Practices* 6(2), 89-96. (in Japanese)
- J4. Nagashima, T. (2014). What makes open education thrive? Examination of factors contributing to the success of open education initiatives. *International Journal for Innovation and Quality in Learning* 2(3), 10-21. [[URL](#)]

Papers in Conference Proceedings

- C1. Nagashima, T., *Britti, J., *Wang, X., *Zheng, B., Turri, V., *Tseng, S., & Alevan, V. (under review). Supporting engaging and effective algebra learning with gamified intelligent tutoring software.
- C2. Alevan, V., Blankestijn, J., Lawrence, L., Nagashima, T., & Taatgen, N. (under review). A dashboard to support teachers during students' self-paced AI-supported problem-solving practice.
- C3. *Hou, X., Nagashima, T., *Love, J., & Alevan, V. (under review). Designing a dashboard for secondary-school learners to support mastery learning in a gamified learning environment.
- C4. Nagashima, T., *Ling, E., *Zheng, B., Bartel, A. N., Silla, E. M., Vest, N. A., Alibali, M. W., & Alevan, V. (2022). How does sustaining and interleaving visual scaffolding help learners? A classroom study with an Intelligent Tutoring System. *Proceedings of the 44th Annual Meeting of the Cognitive Science Society*. Cognitive Science Society.
- C5. Vest, N., Silla, E. M., Bartel, A. N., Nagashima, T., Alevan, V., & Alibali, M. W. (2022). Self-explanation of worked examples integrated in an Intelligent Tutoring System enhances problem solving and efficiency in algebra. *Proceedings of the 44th Annual Meeting of the Cognitive Science Society*. Cognitive Science Society.
- C6. Nagashima, T., *Tseng, S., *Ling, E., Bartel, A. N., Vest, N. A., Silla, E. M., Alibali, M. W., & Alevan, V. (2022). Choose proactively: Students' self-regulated use of visual representations in an Intelligent Tutoring System. *The Annual Meeting for the International Society of the Learning Sciences (ISLS2022)*, Hiroshima, Japan.
- C7. Nagashima, T., *Yadav, G., & Alevan, V. (2021). A framework to guide technology-based educational studies in the evolving classroom environment. In T. De Laet T, R. Klemke, C. Alario-Hoyos, I. Hilliger I, & A. Ortega-Arranz. (Eds.), *Proceedings of the 16th European Conference on Technology Enhanced Learning (EC-TEL2021)* (pp. 207-220). [acceptance rate: 21%]. [[URL](#)]

- C8. **Nagashima, T.**, Bartel, A. N., *Tseng, S., Vest, N.A., Silla, E. M., Alibali, M. W., & Alevén, V. (2021). Scaffolded self-explanation with visual representations promotes efficient learning in early algebra. In T. Fitch, C. Lamm, H. Leder, & K. Teßmar-Raible (Eds.), *Proceedings of the 43rd Annual Meeting of the Cognitive Science Society* (pp. 1858-1864). Cognitive Science Society. [\[URL\]](#)
- C9. **Nagashima, T.**, Bartel, A. N., *Yadav, G., *Tseng, S., Vest, N. A., Silla, E. M., Alibali, M. W., & Alevén, V. (2021). Using anticipatory diagrammatic self-explanation to support learning and performance in early algebra. In E. de Vries, J. Ahn, & Y. Hod (Eds.), *15th International Conference of the Learning Sciences – ICLS 2021* (pp. 474–481). International Society of the Learning Sciences [acceptance rate: 33%]. **Best Design Paper Nominee.** [\[URL\]](#)
- C10. **Nagashima, T.**, *Yadav, G., & Alevén, V. (2021). Rethinking technology-based educational studies in the evolving classroom environment: An interview study with US teachers. In E. de Vries, J. Ahn, & Y. Hod (Eds.), *15th International Conference of the Learning Sciences – ICLS 2021* (pp. 933–934). International Society of the Learning Sciences. [\[URL\]](#)
- C11. Bartel, A. N., Silla, E. M., Vest, N.A., **Nagashima, T.**, Alevén, V., & Alibali, M. W. (2021). Reasoning about equations with tape diagrams: insights from math teachers and college students. In E. de Vries, J. Ahn, & Y. Hod (Eds.), *15th International Conference of the Learning Sciences – ICLS 2021* (pp. 685–688). International Society of the Learning Sciences [acceptance rate: 30%]. [\[URL\]](#)
- C12. **Nagashima, T.**, Bartel, A. N., Silla, E. M., Vest, N. A., Alibali, M. W., & Alevén, V. (2020). Enhancing conceptual knowledge in early algebra through scaffolding diagrammatic self-explanation. In M. Gresalfi & I. S. Horn (Eds.), *14th International Conference of the Learning Sciences* (pp. 35-43). Nashville, TN: International Society of the Learning Sciences. [acceptance rate: 38%]. [\[URL\]](#)
- C13. **Nagashima, T.**, *Yang, K., Bartel, A. N., Silla, E. M., Vest, N. A., Alibali, M. W., & Alevén, V. (2020). Pedagogical Affordance Analysis: Leveraging teachers' pedagogical knowledge for eliciting pedagogical affordances and constraints of instructional tools. In M. Gresalfi & I. S. Horn (Eds.), *14th International Conference of the Learning Sciences* (pp. 1561-1564). Nashville, TN: International Society of the Learning Sciences. [\[URL\]](#)
- C14. Shigeta, K., Takeda, T., Mori, H., Yagi, H., **Nagashima, T.**, Kaneko, D., & Hayashi, Y. (2019). A practice of group-based learning support in online learning based on learner motivation and goal setting. *Workshop paper, Information Processing Society of Japan* (in Japanese).
- C15. Takeda, T., Hayashi, Y., Shigeta, K., Mori, H., Kaneko, D., Yagi, H., & **Nagashima, T.** (2018). Visualizing relationships among content topics and learning activities of online courses. In *Proceedings of EdMedia: World Conference on Educational Media and Technology*. Amsterdam, Netherlands: Association for the Advancement of Computing in Education (AACE).
- C16. Shigeta, K., Yagi, H., Takeda, T., Mori, H., Hayashi, Y., Kaneko, D., & **Nagashima, T.** (2017). A study on improving learning materials utilizing comments on MOOC discussion boards. In *Proceedings of the Annual Conference for Japan Society for Educational Technology*, Shimane. (in Japanese)
- C17. Hayashi, Y., Takeda, T., **Nagashima, T.**, Yagi, H., Mori, H., Kaneko, D., & Shigeta, K. (2016). Development of the dashboard system for teachers to perform effective indication of the learning data analysis. In *Proceedings of the 5th International Conference on Knowledge Creation and Intelligent Computing*. Manado, Indonesia.
- C18. **Nagashima, T.**, Yagi, H., & Shigeta, K. (2015). The core value of delivering MOOC as OER. In *Proceedings of the Annual Conference for Japan Association for Educational Media*, Tokyo. (in Japanese)
- C19. Yagi, H. **Nagashima, T.**, & Shigeta, K. (2015). Improvement model of lectures and teaching materials developed by OER and MOOC. In *Proceedings of the Annual Conference for Japan Association for Educational Media*, Tokyo. (in Japanese)
- C20. Yagi, H., **Nagashima, T.** Hamada, M., Shima, M., Kobayashi, K., & Shigeta K. (2015). Flipped classroom using interactive distance learning system: An experimental class in liberal arts education among national universities in Hokkaido. In *Proceedings of the Annual Conference for Japan Society for Educational*

Technology, Tokyo. (in Japanese)

- C21. Yagi, H., **Nagashima, T.**, Hamada, M., Shima, M., Kobayashi, K., & Shigeta K. (2015). Development of educational videos for liberal arts education among national universities in Hokkaido: How instructional designers and video content specialists can develop a collaborative workflow in a small team. In *Proceedings of the Annual Conference for Japan Society for Information and Systems in Education*, Tokyo. (in Japanese)
- C22. **Nagashima, T.** (2013). Open educational resources in higher education: A global perspective. In *Proceedings of the International Conference for Media in Education*, Aichi.

Conference Abstracts

- A1. Bartel, A. N., Silla, E. M., Vest, N. A., **Nagashima, T.**, Alevan, V., & Alibali, M. W. (2020). Reasoning about equations with tape diagrams: Do visual features matter? In *Proceedings of the 42nd Annual Meeting of the Cognitive Science Society*, Toronto, Canada.

Doctoral Consortia

- D1. **Nagashima, T.** (2021). Towards fostering strategic choices in using diagrams in early algebra. In *Proceedings of the 12th International Conference on the Theory and Application of Diagrams (Diagrams 2021)*. [[URL](#)]
- D2. **Nagashima, T.** (2019). Towards enhancing conceptual knowledge in algebra through diagrammatic self-explanation. In *Companion Proceedings of the 9th International Learning Analytics and Knowledge Conference (LAK19)*. Tempe, AZ. [[URL](#)]
- D3. **Nagashima, T.** (2018). Contextualized instruction in data science and its effect on transfer of learning. In *Proceedings of the 13th European Conference on Technology Enhanced Learning (EC-TEL)*. Leeds, UK.

Manuscripts in Preparation

- M1. **Nagashima, T.**, Bartel, A. N., Silla, E. M., Vest, N. A., *Yang, K., Alibali, M. W., & Alevan, V. (in preparation). Redesigning instructional tools through Pedagogical Affordance Analysis.

OTHER PUBLICATIONS

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- O1. Shigeta, K., Takeda, T., Kaneko, D., Yagi, H., & **Nagashima, T.** (2021). Development of a Moodle plugin for structuring and versioning OER. *Seminar on Collaboration and Learning Environments*. Information Processing Society of Japan.
- O2. Farrow, R., Iniesto, F., Weller, M., Pitt, R., Algers, A., Bass, M., Bozkurt, A., Cox, G., Czerwonogóra, A., Elias, T., Essmiller, K., Funk, J., Lambert, S., Mittelmeier, J., **Nagashima, T.**, Rabin, E., Rets, I., Spica, E., Vladimirschi, V. & Witthaus, G (2021). The GO-GN guide to conceptual frameworks. *Open Education Research Hub. The Open University, UK*. CC-BY 4.0. [[URL](#)]
- O3. **Nagashima, T.** (2018). Recent trends in open textbook adoption and research. *SIG Report. Game Learning and Open Education Special Interest Group*. Japan Society for Educational Technology. (in Japanese)
- O4. Wiens, K., Tarkowski, A., Watanabe, T., **Nagashima, T.**, Allen, N., Appleyard, B., Botero, C., Juliana, M., Mora, L., Smith, J., Salem, N., & Browne, D. (2016). Global Open Policy Report 2016. *Open Policy Network*. [[URL](#)]
- O5. Shigeta, K. & **Nagashima, T.** (2016). Envisioning the future of open education: a perspective from the non-English-speaking world. *FutuOER*.
- O6. **Nagashima, T.** (2016). OER research initiatives around the world. *SIG Report. Game Learning and Open Education Special Interest Group*. Japan Society for Educational Technology. (in Japanese)
- O7. **Nagashima, T.** (2015). How should we approach openness in MOOC? *SIG Report. Game Learning and*

Open Education Special Interest Group. Japan Society for Educational Technology. (in Japanese)

- O8. Watanabe, T., Shigeta, K., **Nagashima, T.**, & Tanaka, K. (2014). Implication of EU's open education policy on educational system in Japan: Global competitiveness, employment, and digital divide. *Report by Innovation Nippon*. (in Japanese)

PEER-REVIEWED CONFERENCE PRESENTATIONS

- T1. Bartel, A. N., Vest, N. A., Silla, E. M., **Nagashima, T.**, Alevén, V., & Alibali, M. W. (2022). Do tape diagrams in explanations of worked examples foster conceptual understanding? Evidence from early algebra. Submitted to the Annual Meeting of the Mathematical Cognition and Learning Society.
- T2. Silla, E. M., Vest, N. A., Bartel, A. N., **Nagashima, T.**, Alevén, V., & Alibali, M. W. (2022). Middle-school students' preferences for visual features of tape diagrams and their relation to symbolizing equations. Submitted to the Annual Meeting of the Mathematical Cognition and Learning Society.
- T3. Silla, E. M., Vest, N. A., **Nagashima, T.**, Bartel, A. N., Anthony, L. E., Alevén, V., & Alibali, M. W. (2022). Efficacy of tape diagrams: Evidence from an Intelligent Tutoring System. Lightning talk presented at the Annual Meeting of the Mathematical Cognition and Learning Society.
- T4. **Nagashima, T.**, *Yadav, G., & Alevén, V. (2021). A framework for conducting remote classroom research. Presented at the CIRCLS'21 Convening. Center for Integrative Research in Computing and Learning Sciences.
- T5. Silla, E. M., Tommasi, T., Vest, N. A., Bartel, A. N., Buehler, Z., Manhart, H., Petersdorff, M., **Nagashima, T.**, Alevén, V. & Alibali, M. W. (2021). Fostering conceptual understanding of equation solving via an Intelligent Tutoring System. *Wisconsin Center for Education Research*.
- T6. **Nagashima, T.**, *Yadav, G., & Alevén, V. (2021). A framework to guide technology-based educational studies in the evolving classroom environment. In T. De Laet T, R. Klemke, C. Alario-Hoyos, I. Hilliger I, & A. Ortega-Arranz. (Eds.), *Proceedings of the 16th European Conference on Technology Enhanced Learning (EC-TEL2021)* (pp. 207-220).
- T7. **Nagashima, T.**, Bartel, A. N., *Tseng, S., Vest, N.A., Silla, E. M., Alibali, M. W., & Alevén, V. (2021). Scaffolded self-explanation with visual representations promotes efficient learning in early algebra. In T. Fitch, C. Lamm, H. Leder, & K. Teßmar-Raible (Eds.), *Proceedings of the 43rd Annual Meeting of the Cognitive Science Society* (pp. 1858-1864). Cognitive Science Society.
- T8. **Nagashima, T.**, Bartel, A. N., *Yadav, G., *Tseng, S., Vest, N. A., Silla, E. M., Alibali, M. W., & Alevén, V. (2021). Using anticipatory diagrammatic self-explanation to support learning and performance in early algebra. In E. de Vries, J. Ahn, & Y. Hod (Eds.), *15th International Conference of the Learning Sciences – ICLS 2021* (pp. 474–481). International Society of the Learning Sciences.
- T9. **Nagashima, T.**, *Yadav, G., & Alevén, V. (2021). Rethinking technology-based educational studies in the evolving classroom environment: An interview study with US teachers. In E. de Vries, J. Ahn, & Y. Hod (Eds.), *15th International Conference of the Learning Sciences – ICLS 2021* (pp. 933–934). International Society of the Learning Sciences.
- T10. Vest, N. A., Silla, E. M., Bartel, A. N., **Nagashima, T.**, Alevén, V. & Alibali, M. W. (2021). Learning from worked examples: Conceptually rich explanations predict conceptual gains. The Society for Research in Child Development Biennial Meeting.
- T11. Bartel, A. N., Silla, E. M., Vest, N. A., **Nagashima, T.**, Tang, Y., Alevén, V. & Alibali, M. W. (2021). Do tape diagrams promote a focus on conceptual principles? Evidence from equation solving with an Intelligent Tutoring System. In Wong, T. (Chair), *Principle knowledge in mathematics: Its development, cognitive predictors, and potential interventions*, Symposium at the Annual Meeting of the Mathematical Cognition and Learning Society, Dublin, Ireland. [[Recording](#)]
- T12. **Nagashima, T.**, Bartel, A., Silla, E., Vest, N., Alibali, M., & Alevén, V. (2020). Collaborative open

- educational practices: sharing evidence-based Open Educational Resources to facilitate meaningful adaptation. Open Education Conference. [\[URL\]](#)
- T13. Shigeta, K., Takeda, T., Mori, H., Yagi, H., **Nagashima, T.**, Kaneko, D., & Hayashi, Y. (2019). A practice of group-based learning support in online learning based on learner motivation and goal setting. *Workshop paper, Information Processing Society of Japan* (in Japanese).
- T14. **Nagashima, T.**, Xiong, Y., Bodily, R., & Stamper, J. (2018). Student engagement and learning in an OER-based course: a longitudinal study. Open Education Conference, NY.
- T15. **Nagashima, T.** & Stamper, J. (2018). Contextualized instruction with OER: Examining the Remix Hypothesis. Open Education Conference, NY.
- T16. Cannanure, V., **Nagashima, T.**, Gordon, G., & Brown, T. (2018). QnA: a low-cost system for developing interactive OER in computer science. Open Education Conference, NY
- T17. Mori, H., **Nagashima, T.**, Takeda, T., Hayashi, Y., Kaneko, D., Kojima, K., Yagi, H., & Shigeta, K. (2018). Persistence decision model for learning in MOOC. Study Workshop by Japan Society of Educational Technology, Tokyo. (in Japanese)
- T18. Takeda, T., Hayashi, Y., Shigeta, K., Mori, H., Kaneko, D., Yagi, H., & **Nagashima, T.** (2018). Visualizing relationships among content topics and learning activities of online courses. In *Proceedings of EdMedia: World Conference on Educational Media and Technology*. Amsterdam, Netherlands: Association for the Advancement of Computing in Education (AACE).
- T19. Shigeta, K., Yagi, H., Takeda, T., Mori, H., Hayashi, Y., Kaneko, D., & **Nagashima, T.** (2017). A study on improving learning materials utilizing comments on MOOC discussion boards. In *Proceedings of the Annual Conference for Japan Society for Educational Technology*, Shimane. (in Japanese)
- T20. Hayashi, Y., Takeda, T., **Nagashima, T.**, Yagi, H., Mori, H., Kaneko, D., & Shigeta, K. (2016). Development of the dashboard system for teachers to perform effective indication of the learning data analysis. In *Proceedings of the 5th International Conference on Knowledge Creation and Intelligent Computing*. Manado, Indonesia.
- T21. **Nagashima, T.**, Yagi, H., & Shigeta, K. (2015). The core value of delivering MOOC as OER. In *Proceedings of the Annual Conference for Japan Association for Educational Media*, Tokyo. (in Japanese)
- T22. Yagi, H. **Nagashima, T.**, & Shigeta, K. (2015). Improvement model of lectures and teaching materials developed by OER and MOOC. In *Proceedings of the Annual Conference for Japan Association for Educational Media*, Tokyo. (in Japanese)
- T23. Yagi, H., **Nagashima, T.** Hamada, M., Shima, M., Kobayashi, K., & Shigeta K. (2015). Flipped classroom using interactive distance learning system: An experimental class in liberal arts education among national universities in Hokkaido. In *Proceedings of the Annual Conference for Japan Society for Educational Technology*, Tokyo. (in Japanese)
- T24. Yagi, H., **Nagashima, T.**, Hamada, M., Shima, M., Kobayashi, K., & Shigeta K. (2015). Development of educational videos for liberal arts education among national universities in Hokkaido: How instructional designers and video content specialists can develop a collaborative workflow in a small team. In *Proceedings of the Annual Conference for Japan Society for Information and Systems in Education*, Tokyo. (in Japanese)
- T25. Hrach, S., Gallant, J., & **Nagashima, T.** (2017). Motivating factors among faculty for adopting OER. Open Education Conference, Anaheim.
- T26. Kaneko, D., Kojima, K., Shigeta, K., Takeda, T., Mori, H., Hayashi, Y., Yagi, H., & **Nagashima, T.** (2017). Evaluation criteria for pedagogical practices in MOOC. Study Workshop by Japan Society for Information and Systems in Education. (in Japanese)

- T27. Kaneko, D., Kojima, K., Shigeta, K., Takeda, T., Mori, H., Hayashi, Y., Yagi H., & **Nagashima, T.** (2017). Applicable evaluation criteria for MOOC. Study Workshop by Japanese Society for Information and Systems in Education. (in Japanese)
- T28. Shigeta, K., Fujita, Y., Yagi, H., **Nagashima, T.**, Hamada, M., Sata, M., Matsumoto, T., Tanaka, H., Kobayashi, K., & Shima, M. (2016). Open education strategy at universities in Hokkaido region utilizing OER. Open Education Global 2016, Kraków.
- T29. Takeda, T., Hayashi, Y., Shigeta, K., Mori, H., Kaneko, D., Yagi, H., & **Nagashima, T.** (2016). Dashboard development for improving instruction on MOOC. Study Workshop by Japan Society of Educational Technology, Chiba. (in Japanese)
- T30. Shigeta, K., Matsukawa, H., Matsuda, T., Watanabe, Y., Kato, H., Yagi, H., & **Nagashima, T.** (2016). Developing classifying methods of course types through the analysis of syllabi. Study Workshop by Japan Society for Educational Technology, Kagawa. (in Japanese)
- T31. **Nagashima, T.**, Shigeta, K., & Bier, N. (2015). Tackling a lack of local OER: How international OER adoption enhanced the quality of learning on campus. Open Education Conference, Vancouver.
- T32. **Nagashima, T.** (2015). What do we really mean by “open”? SIG Session, Annual Conference for Japan Society for Educational Technology, Tokyo. (in Japanese)
- T33. **Nagashima, T.** (2015). Running open MOOC: Experience from Hokkaido University. Academic Exchange for Information Environment and Strategy Seminar, Sapporo. (in Japanese)
- T34. **Nagashima, T.** (2013). Open educational resources in higher education: A global perspective. In *Proceedings of the International Conference for Media in Education*, Aichi.

INVITED TALKS

- IT1. **Nagashima, T.** (2021). Learning analytics and gamification. Presented at the Symposium on Digital Transformation in Higher Education. National Institute of Informatics. Tokyo, Japan. (in Japanese).
- IT2. **Nagashima, T.** (2021). Open Educational Resources and the COVID-19 pandemic: Opportunities and challenges. Hokkaido University, Sapporo (in Japanese).
- IT3. **Nagashima, T.** (2021). Co-design in open education practices. International Christian University, Tokyo.
- IT4. **Nagashima, T.** (2020). Pedagogical Affordance Analysis. AECT Annual Convention (as part of AECT awardees' presentations).
- IT5. **Nagashima, T.** (2020). Connecting education research with classroom practices through co-design. Keio University, Tokyo (in Japanese).
- IT6. **Nagashima, T.** (2020). Designing instruction by leveraging pedagogical affordances and constraints. International Christian University, Tokyo.
- IT7. **Nagashima, T.** (2019). Recent trends in learning analytics research. Hokkaido University, Sapporo. (in Japanese).
- IT8. **Nagashima, T.** (2016). Effective use of ICT in higher education: lessons learned at Hokkaido University. Academic Link Seminar. Chiba University, Chiba. (in Japanese)
- IT9. Allen, N., Beckett, M., Lesko, I., Wiens, K., Jacob, M., & **Nagashima, T.** (2015). Open Education: Policy and Practice [Invited panel]. OpenCon 2015, Brussels.

RESEARCH & PROFESSIONAL EXPERIENCES

- 2019 - present **Cabinet Office, Government of Japan**, Tokyo, JAPAN
Data Science Consultant
- Conducting weekly analyses on the enrollment and learning data from a large online learning platform in Japan
- 2018 - present **Human-Computer Interaction Institute**, Carnegie Mellon University, Pittsburgh, PA
Graduate Researcher with Vincent Alevan and Martha Alibali (University of Wisconsin-Madison)
- Conducting collaborative research on classroom and lab-based research using Intelligent Tutoring Systems for improving algebra learning
- 2021 **Institute for Policy Research**, Northwestern University, Evanston, IL
Participant, Summer Research Training Institute on Improving Evaluations of R&D in STEM Education
- Learned about power analysis for school-based research and applied to various experimental design settings
- 2017 - 2019 **Program in Interdisciplinary Education Research**, Carnegie Mellon University, Pittsburgh, PA
Associate
- 2017 - 2018 **Human-Computer Interaction Institute**, Carnegie Mellon University, Pittsburgh, PA
Graduate Researcher with John Stamper
- Conducted research on data science and learning analytics through user-centered approaches
- 2018 **LearnLab Summer School**, Carnegie Mellon University, Pittsburgh, PA
Participant, Educational Data Mining track
- Learned practical skills in using data mining to investigate students' learning processes in an interactive online learning environment
- 2016 - 2018 **Open Education Group**, Provo, UT
OER Research Fellow
- Conducted collaborative research on understanding motivational factors among university faculty for adopting Open Educational Resources and published the results in [J1]
- 2015 - 2018 **Center for Open Education**, Hokkaido University, Sapporo, JAPAN
Research Collaborator
- Conducted collaborative research on the use of Open Educational Resources and learning analytics
- 2017 **Open Learning Initiative**, Stanford University, Stanford, CA
Learning Engineer Intern with Candace Thille
- Conducted user-centered research and design on an interactive learning dashboard for supporting college students' sense-making in introductory statistics in Open Learning Initiative
- 2015 - 2016 **Fujitsu/Hokkaido University**, Sapporo, Japan
Research Fellow
- Conducted data collection and preliminary analyses on enrollment and learning among university students at Hokkaido University
- 2015 - 2016 **Open Policy Network**, Creative Commons, Mountain View, CA
Researcher
- Conducted international collaborative research with researchers and policymakers on the status of governmental policies supporting "open" practices across core domains (including education). Published the results of the survey and internet research in [O3]
- 2014 - 2016 **Center for Open Education**, Hokkaido University, Sapporo, JAPAN
Instructional Designer / Project Manager
- Co-designed over 200 online instructional materials with university faculty

- 2014 - 2015 **Innovation Nippon**, Tokyo, JAPAN
Research Assistant with Tomoaki Watanabe
 - Conducted literature research on innovative open educational practices in Europe, publishing the results in [O7]
- 2013 - 2014 **International Christian University**, Tokyo, JAPAN
Research Assistant with Masako Miyahara & Atsuko Watanabe
 - Conducted research on college students' attitudes towards learning English
- 2013 - 2014 **International Christian University**, Tokyo, JAPAN
Research Assistant with Insung Jung
 - Conducted literature research on the worldwide open education movement

TEACHING & MENTORING EXPERIENCES

Teaching

- 2021 **Carnegie Mellon University**, Pittsburgh, PA
Teaching Assistant with Raelin Musuraca and Motahhare Eslami
 Course Title: User-Centered Research and Evaluation (99 graduate and undergraduate students)
 - Gave lectures in 80-min lab sessions every week (15 weeks, 24 students)
 - Graded weekly assignments and course projects on user research
 - Helped design course materials including lecture slides, quizzes, and assignments
 - Held weekly office hours to support student learning
 - Mid-term teaching evaluation: 4.83/5.00 [[URL](#)]
- 2018 **Carnegie Mellon University**, Pittsburgh, PA
Teaching Assistant with John Stamper and Adam Perer
 Course Title: Interactive Data Science (70 graduate and undergraduate students)
 - Taught four 70-min lectures on experimental design and data analysis
 - Graded students' weekly assignments and course projects on data science
 - Designed course materials including lecture slides and assignments
 - Helped student groups with their course projects
- 2014, 2018 **Open Education Lab**, Sapporo, JAPAN
Teaching Assistant with Katsusuke Shigeta, Toshiyuki Takeda, and Hideki Mori
 Course Title: Open Education and the Future of Learning (offered on Japanese MOOC; approx. 8,000 participants)
 - Designed course assignments and quizzes
 - Managed online discussions daily
 - Provided instructional support for learners
 - Offered "in-person" sessions with about 30 learners in the course to promote deeper understanding of the topics covered in the course
- 2015 **Hokkaido University**, Sapporo, JAPAN
Teaching Assistant with lead instructors Tamotsu Kozaki and Naoko Watanabe
 Course Title: Effects of Radiation: An Introduction to Radiation and Radioactivity (offered on edX; approx. 5,000 participants)
 - Co-developed lecture materials and assignments with instructors
 - Facilitated online discussions
 - Helped with technical and content-related issues
 - Provided online support for learners
- 2014 - 2016 **Hokkaido University**, Sapporo, JAPAN
Instructional Designer & Project Manager
 - Co-designed with university faculty over 200 educational materials (modules) in various domains, which were shared as Open Educational Resources (OER)

- 2014 - 2016 **Hokkaido University**, Sapporo, JAPAN
Teaching Assistant with Katsusuke Shigeta
 Course Title: Introduction to Information Science (30 undergraduate students)
- Co-developed course materials (lectures and assignments)
 - Taught two 60-min lectures on the topics of cybersecurity and copyright
 - Facilitated classroom discussions
 - Graded assignments

Student Mentoring Experiences

My core student mentoring activities include: regular communications to support their work, providing feedback on design and research, collaboratively writing papers and conducting user research. In all mentoring activities, I ensure that students learn valuable knowledge and skills in research and/or design (e.g., through setting goals and offering opportunities for students to take a lead and explore new aspects of the assigned task).

- 2021-present **Elizabeth Ling** (Undergraduate student at Harvard)
Research Intern for “Promoting Conceptual and Procedural Knowledge with ITSs”
- 2021-present **Bin Zheng** (Undergraduate student at CMU)
Research Intern for “Promoting Conceptual and Procedural Knowledge with ITSs”
- 2020-present **Xiaoying Meng** (Undergraduate student at CMU, currently a master’s student at CMU)
Research Assistant for “Gamification for ITSs”
- 2020-present **Stephanie Tseng** (Undergraduate student at CMU)
Research Assistant for “Promoting Conceptual and Procedural Knowledge with ITSs”
- 2019-present **John Britti** (Undergraduate student from Georgia Tech, currently Master’s student at GT)
REU¹ Intern & Research Assistant for “Gamification for ITSs”
- 2021 **Marcus Artigue** (Undergraduate student at Hope College)
REU Intern for “Promoting Conceptual and Procedural Knowledge with ITSs”
- 2021 **Michelle Ma** (Undergraduate student at UCLA, currently at CNN)
REU Intern for “Promoting Conceptual and Procedural Knowledge with ITSs”
- 2019-2022 **Xiran Wang** (Undergraduate student at CMU, currently at Apple)
Research Assistant for “Gamification for ITSs”
- 2020-2021 **Jeff Chen** (Undergraduate student at CMU)
REU Intern & Research Assistant for “Gamification for ITSs”
- 2020-2021 **Sihan Wu** (Undergraduate student at CMU)
Independent Study for “Gamification for ITSs”
- 2020-2021 **Xinying Hou** (Graduate student at CMU, currently a PhD student at the UMich)
Independent Study and Extern Research Assistant for “Gamification for ITSs”
- 2020 **Ruitao Li** (Undergraduate student at CMU)
Research Assistant for “Promoting Conceptual and Procedural Knowledge with ITSs”
- 2020 **Jordan Love** (Undergraduate student at University of Kansas)
REU Intern for “Gamification for ITSs”
- 2020 **Gautam Yadav** (Graduate student at CMU, currently Learning Engineer at CMU HCII)

¹ The REU (Research Experiences for Undergraduates) program is a program by National Science Foundation that provides an opportunity for undergraduate students to work on a research project for the duration of 10 weeks.

Research Collaborator for “Promoting Conceptual and Procedural Knowledge with ITSs”

- 2020 **Junhui Yao** (Graduate student at CMU, currently Software Engineer at Huawei)
Research Assistant for “Promoting Conceptual and Procedural Knowledge with ITSs”
- 2020 **Alan Zhao** (Undergraduate student at Pomona College)
REU Intern for “Promoting Conceptual and Procedural Knowledge with ITSs”
- 2019 **Evan Fang** (Undergraduate student at CMU)
Research Assistant for “Promoting Conceptual and Procedural Knowledge with ITSs”
- 2019 **Emilie Guermeur** (Undergraduate student at CMU)
Independent Study for “Promoting Conceptual and Procedural Knowledge with ITSs”
- 2019 **Trula Rael** (Undergraduate student at Harvard, currently at Boston Consulting Group)
REU Intern for “Promoting Conceptual and Procedural Knowledge with ITSs”
- 2019 **Kexin Yang** (Graduate student at CMU, currently a PhD student at CMU HCII)
Research Assistant for “Promoting Conceptual and Procedural Knowledge with ITSs”

Other Mentoring Experiences

- 2020, 2021 **LearnLab Summer School**, Carnegie Mellon University, Pittsburgh, PA
Mentor, Intelligent Tutoring System track
- Mentored two participant groups (five students in total) on their design and implementation of an intelligent tutoring system

PRACTITIONER RESOURCES & OPEN EDUCATIONAL RESOURCES (OER)

- 2020 **Tape Diagram Template for Equations**
Tape diagram representation template made in Google slides, provided under CC-BY-NC
<https://tinyurl.com/tapetemplate>
- 2020 **Tape Diagram Generation Tool**
Automatic tape diagram generation tool available on MathTutor
<https://preview.ctat.cs.cmu.edu/home>

SERVICE

- 2021 - present **Creative Commons Copyright Platform**
Member, Artificial Intelligence, Copyright, & Open Sharing Working Group
- 2021 - present **Creative Commons Copyright Platform**
Member, Beyond Copyright: The Ethics of Open Sharing Working Group
- 2017 - present **Global OER Graduate Network**, The Open University, Milton Keynes, UK
Ph.D. Student Member
- 2018 - 2021 **Japan Society for Educational Technology**, Tokyo, JAPAN
Organizing Member, Game Learning and Open Education Special Interest Group (JSET SIG-05)
- 2014 - present **OER World Map**, Köln, GERMANY
Country Champion of Japan
- 2012 - present **Creative Commons Japan (CommonSphere)**, Tokyo, JAPAN
Member (Education Research)

2016 - 2017 **The Rotary Club of Los Altos**, Los Altos, CA
Honorary Member

2013 **International Christian University**, Tokyo, JAPAN
Organizer, Senior Thesis Poster Session Program

Editorial Board

2021 - present CIRCLS/ISLS Rapid Community Reports

Journal and Conference Reviewing

2021 - present Journal of Interactive Media in Education (JIME)
2021 - present ACM Interaction Design and Children Conference (IDC)
2020 - present Annual Meeting of the International Society of the Learning Sciences (ISLS)
2019 - present Mathematical Cognition and Learning Society Conference (MCLS)
2019 - present Open Education Conference (OpenEd)
2018 - present ACM Conference on Human Factors in Computing Systems (CHI)
2018 - present European Conference on Technology Enhanced Learning (EC-TEL)
2017 - present International Learning Analytics and Knowledge Conference (LAK)
2016 - present International Review of Research in Open and Distributed Learning (IRRODL)
2017 - 2020 International Conference of the Learning Sciences (ICLS)

Conference Organizing

2020 Session Chair, Annual Meeting of the International Society of the Learning Sciences (ISLS)

MEMBERSHIP

2019 - present Cognitive Science Society
2017 - present International Society of the Learning Sciences
2014 - present Japanese Society for Educational Technology