Publication list

Ilkka Jormanainen

October 19, 2020

Peer-reviewed scientific articles

Book Chapters

1. Petrelius, M., Laakso, M., **Jormanainen, I.**, & Sutinen, E. (2016). How to Improve K12 Teachers' ICT Competence in Finland: The Joensuu Region Case. In J. Zhang et al. (Eds.) *ICT in Education in Global Context: The Best Practices in K-12 Schools*, (pp. 229-252). Springer Singapore.

Journal articles

2. Cooper, A. P., **Jormanainen, I**., Shipepe, A., & Sutinen, E. (2020). Faith communities online: Christian churches' reactions to the COVID-19 outbreak. In *International Journal of Web Based Communities*. To appear.

3. Toivonen, T., **Jormanainen, I.**, & Tukiainen, M. (2019). Augmented Intelligence in Educational Data Mining. In *Smart Learning Environments*, 6(10), 25 pages.

4. **Jormanainen, I.**, & Sutinen, E. (2014). Role blending in a learning environment supports facilitation in a robotics class. In *Journal of Educational Technology & Society*, 17(1), 294-306.

5. Randolph, J.J., Virnes, M., **Jormanainen, I.**, & Eronen, P.J. (2006). *The effects of a computer-assisted interview tool on data quality*. In Journal of Educational Technology & Society, 9(3), 195-205.

Conference articles

6. Kahila., J., Parkki, T., Gröhn, A., Karvinen, A., Telimaa, E., Riikonen, P., Tiitta, R., Haantio, P., Keinänen, A., Kerkkänen, T., **Jormanainen, I.**, Penttinen, S., & Tedre, M. (2020). Escape Room Game for CT Learning Activities in the Primary School. In *Proceedings of the 20th Koli Calling International Conference on Computing Education Research (Koli Calling '20)*, November 19–22, 2020, Koli, Finland, Finland. ACM, New York, NY, USA, 5 pages.

7. Conde, M. Á, Rodríguez-Sedano, F. J., Fernández, C., Ramos, M-J., Alves, J. F., Celis-Tena, S., Gonçalves, J., Lima, J., Reimann, D., **Jormanainen, I**., & García-Peñalvo, F. J. (2020). Adaptation of RoboSTEAM Project to the Pandemic Situation. In Proceedings of the Eight International Conference Technological Ecosystems for Enhancing Multiculturality (TEEM 2020), ACM. To appear.

8. Shipepe, A, **Jormanainen, I.**, & Sutinen, E. (2020). Educational Robotics Initiatives in Namibia and Worldwide. In *Proceedings of the Eight International Conference Technological Ecosystems for Enhancing Multiculturality (TEEM 2020)*, ACM. To appear.

9. **Jormanainen, I.**, & Tukiainen, M. (2020). Attractive Educational Robotics Motivates Younger Students to Learn Programming and Computational Thinking. In *Proceedings of the Eight International Conference Technological Ecosystems for Enhancing Multiculturality (TEEM 2020)*, ACM. To appear.

10. Conde, M. Á, Rodríguez-Sedano, F. J., Fernández-Llamas, C., Jesus, M., Ramos, M-J., Celis-Tena, S., Gonçalves, J., **Jormanainen, I**., & García-Peñalvo, F. J. (2020). Exchanging Challenge Based Learning Experiences in the Context of RoboSTEAM Erasmus+ Project. In Zaphiris P., Ioannou A. (eds.) *Learning and Collaboration Technologies. Designing, Developing and Deploying Learning*

Experiences. HCII 2020 (pp. 442-455). Lecture Notes in Computer Science, vol 12205. Springer, Cham.

11. Shipepe, A., **Jormanainen, I**., Duveskog, M., & Sutinen E. (2020). Screams of joy yield creative projects at the educational robotics workshop in Namibia. In *International Conference on Advanced Learning Technologies and Technology-enhanced Learning (ICALT)* (pp. 103-15). Tartu, Estonia, IEEE Computer Society.

12. Toivonen, T., **Jormanainen, I**., Kahila, J., Tedre, M., Valtonen T., & Vartiainen, H. (2020). Co-Designing Machine Learning Apps in K–12 with Primary School Children. In *International Conference on Advanced Learning Technologies and Technology-enhanced Learning (ICALT)* (pp. 308-310). Tartu, Estonia, IEEE Computer Society.

13. Tedre, M., Vartiainen, H., Kahila, J., Toivonen, T., **Jormanainen, I**., & Valtonen T. (2020). Machine learning introduces new perspectives to data agency in K–12 computing education. In *Proceedings of IEEE Frontiers in Education (FIE)*, IEEE Computer Society. To appear.

14. Vartiainen, H., Toivonen, T., **Jormanainen, I**., Kahila, J., Tedre, M., & Valtonen T. (2020). Machine learning for middle-schoolers: Children as designers of ML apps. In *Proceedings of IEEE Frontiers in Education (FIE)*, IEEE Computer Society. To appear.

15. Mariescu-Istodor, R., & **Jormanainen, I.** (2019). Machine Learning for High School Students. In *Proceedings of 19th Koli Calling International Conference on Computing Education Research*. Article No. 10. ACM, New York, NY, USA.

16. Yigzaw, S., **Jormanainen, I.**, & Tukiainen, M. (2019). Trends in the Role of ICT in Higher Education Knowledge Management Systems: A Systematic Literature Review. In *Proceedings of the Seventh International Conference Technological Ecosystems for Enhancing Multiculturality (TEEM '19)* (pp. 473-480). ACM, New York, NY, USA.

17. Habte Mare, A., **Jormanainen, I.**, & Tedre, M. (2019). Eritrean Pre-service Teachers' Perceptions of and Proficiency with TPACK and ICT Integration in Education. In *Proceedings of the Seventh International Conference Technological Ecosystems for Enhancing Multiculturality (TEEM '19)* (pp. 582-588). ACM, New York, NY, USA.

18. Toivonen, T., & **Jormanainen, I.** (2019). Evolution of Decision Tree Classifiers in Open Ended Educational Data Mining. In *Proceedings of the Seventh International Conference Technological Ecosystems for Enhancing Multiculturality (TEEM '19)* (pp. 290-296). ACM, New York, NY, USA.

19. Conde, M. Á, Fernández, C., Alves, J., Ramos, M., Celis-Tena, S., Gonçlaves, J, Lima, J., Reimann, D., **Jormanainen, I.**, & García-Peñalvo, F. J. (2019). RoboSTEAM - Definition of a Challenge Based Learning Approach for integrating STEAM and develop Computational Thinking. In *Proceedings of the Seventh International Conference Technological Ecosystems for Enhancing Multiculturality (TEEM '19)* (pp. 24-30). ACM, New York, NY, USA.

20. Saqr M., Nouri J., & **Jormanainen I.** (2019) A Learning Analytics Study of the Effect of Group Size on Social Dynamics and Performance in Online Collaborative Learning. In Scheffel M., Broisin J., Pammer-Schindler V., Ioannou A., Schneider J. (eds) *Transforming Learning with Meaningful Technologies Proceedings of Fourteenth European Conference on Technology Enhanced Learning (EC-TEL 2019)* (pp. 466-479). Lecture Notes in Computer Science, vol 11722. Springer, Cham.

21. **Jormanainen, I.** (2018). On computer science major students' motivation in a practically oriented robotics course. In *Proceedings of 18th Koli Calling International Conference on Computing Education Research*. ACM, New York, NY, USA.

22. **Jormanainen, I**., Toivonen, T., & Nivalainen, V. (2018). A Smart Learning Environment for Environmental Education. In Chang, M., Popescu, E., Kinshuk, Chen N.-S., Jemni, M., Huang, R., Spector, J.M. (eds), *Proceedings of the International Conference on Smart Learning Environments (ICSLE 2018)* (pp. 13-16). Springer, Singapore.

23. Toivonen, T., **Jormanainen, I**., Suero Montero, C., & Alessandrini, A. (2018). Innovative Maker Movement Platform for K-12 Education as a Smart Learning Environment. In Chang, M., Popescu, E., Kinshuk, Chen N.-S., Jemni, M., Huang, R., Spector, J.M. (eds), *Proceedings of the International Conference on Smart Learning Environments (ICSLE 2018)* (pp. 61-66). Springer, Singapore.

24. Suero Montero, C., & **Jormanainen, I.** (2017). Theater Meets Robot – Toward Inclusive STEAM Education. In Alimisis D., Moro M., Menegatti E. (eds), *Educational Robotics in the Makers Era (Edurobotics 2016)*, Advances in Intelligent Systems and Computing, Vol 560, (pp. 34-40), Springer, Cham.

25. Mutafunga, E., Hämäläinen, J., Tewelde, S., Kifle, R., Tesfazgfi, T., Moreno, A., & **Jormanainen, I**. (2017). A Collaborative Approach for Local Training on Contemporary Mobile Technologies in Eritrea. In *Proceedings of IEEE AFRICON 2017 conference* (pp. 838-843), IEEE Computer Society.

26. Toivonen, T., **Jormanainen, I**., & Tukiainen M. (2017). An open robotics environment motivates students to learn the key concepts of artificial neural networks and reinforcement learning. In Lepuschitz W., Merdan M., Koppensteiner G., Balogh R., Obdržálek D. (eds), *Proceedings of 8th International Conference on Robotics in Education*, Advances in Intelligent Systems and Computing, Vol 630, (pp. 317-328), Springer, Cham.

27. García-Peñalvo, F.J., Rees, A. M., Hughes, J., **Jormanainen, I**., Toivonen T., & Vermeersch, J. (2016). A survey of resources for introducing coding into schools. In *Proceedings of the Fourth International Conference Technological Ecosystems for Enhancing Multiculturality (TEEM '16)* (pp. 19-26), New York, NY, USA: ACM.

28. Toivonen, T., & **Jormanainen, I.** (2016). Using JS-Eden to introduce the concepts of reinforcement learning and artificial neural networks. In *Proceedings of the 16th Koli Calling Conference on Computing Education Research* (pp. 165-169), New York, NY, USA: ACM.

29. Beynon, M., Boyatt, R., Foss, J., Hall, C., Hudnott, E., Pope, N., Russ, S., Macleod, H., Alimisis, D., Alimisi, R., Zoulias, E., **Jormanainen, I.**, Toivonen, T., Kommers, P., Tomcsanyi, P., & Winczer, M. (2016). Playing Games with Observation, Dependency, and Agency in a New Environment for Making Construals. In *Proceedings of 2016 International Conference on Interactive Technologies and Games (ITAG)* (pp. 21-28). IEEE Computer Society.

30. Laamanen, M., **Jormanainen, I.**, & Sutinen, E. (2015). Theater Robotics for Human Technology Education. In *Proceedings of the 15th Koli Calling Conference on Computing Education Research* (pp. 127–131), New York, NY, USA: ACM.

31. Beynon, M., Boyatt, R., **Jormanainen, I.**, & Moreno, A. (2015). Where Making Construals Meets Learning to Code. In *Proceedings of the 15th Koli Calling Conference on Computing Education Research* (pp. 159-160), New York, NY, USA: ACM.

32. **Jormanainen, I.**, & Sutinen, E. (2015). Potential of Hetki Social Media App in Promoting Interfaith Dialogue: Work in Progress. In *The First Workshop on Religion on Social Media, The International AAAI Conference on Web and Social Media (ICWSM)*.

33. Meurig, M., Foss, J., Hudnott, E., Russ S., Hall, C., Boyatt, R., King E., Sutinen, E., **Jormanainen I.**, Islas, C., Moréno, A., Macleod H., Ross, J., Kommers P., Alimisis D., Zoulias E., Alimisi R., Tomcsanyi P., & Winczer M. (2016). Making

construals as a new digital skill. Dissolving the program - and the programmer - interface. In *Proceedigns of the 2015 International Conference on Interactive Technologies and Games (iTAG)* (pp. 9-16). IEEE Computer Society.

34. **Jormanainen, I.**, Pietinen, S., Tukiainen, M., Innanen, T., & Ojala, E. (2014). Developing mobile services to support informal learning through automatic content delivery in religious contexts: a design research approach. In D. G. Sampson, J. M. Spector, N. Chen, R. Huang, & Kinshuk (Ed*.), The 14th IEEE International Conference on Advanced Learning Technologies* (ICALT) (pp. 634-636). Los Alamitos, California: IEEE Computer Society.

35. **Jormanainen, I.**, & Sutinen, E. (2013). An open approach for educational data mining. In *Proceedings of the 13th Koli Calling International Conference on Computing Education Research* (pp. 203-2014), New York, NY, USA: ACM.

36. Harfield, A., **Jormanainen, I.**, Rungrattanaubol, J., & Viriyapong, R. (2013). An open monitoring environment for primary school children engaged in tablet-based learning. In *Proceedings of the 10th International Joint Conference on Computer Science and Software Engineering*. (JCSSE 2013), Khon Kaen, Thailand. 29th-31st May 2013. pp 207-211.

37. **Jormanainen, I.**, Beynon, M., & Sutinen, E. (2012). A novel learning environment to support teacher's work in a robotics class. In *17th International Symposium on Artificial Life and Robotics (AROB 2012)*. (pp. 1075-1078).

38. **Jormanainen, I.**, & Sutinen, E. (2012). Using Data Mining to Support Teacher's Intervention in a Robotics Class. In *Proceedings of Fourth IEEE International Conference on Digital Game and Intelligent Toy Enhanced Learning* (pp. 39-46). Los Alamitos, California: IEEE Computer Society.

39. **Jormanainen, I.** & Korhonen P. (2010). Science Festivals on Computer Science Recruitment. In *Proceedings 10th Koli Calling International Conference on Computing Education Research (Koli Calling '10)* (pp. 72-73). New York, NY, USA: ACM.

40. Harfield, A., **Jormanainen, I.**, & Shujau, H. (2009). First Steps in Distributed Tangible Technologies: A Virtual Tug of War. In *The 8th International Conference on Interaction Design and Children (IDC '09)* (pp. 178-181). New York, NY, USA: ACM.

41. **Jormanainen, I.**, Harfield, A., & Sutinen, E. (2009). Supporting Teacher Intervention in Unpredictable Learning Environments. In *The 9th IEEE International Conference on Advanced Learning Technologies (ICALT 2009)* (pp. 584–588). IEEE Computer Society.

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43. **Jormanainen, I.**, & Harfield, A. (2008). Supporting the teacher in educational robotics classes: work in progress. In *The 16th International Conference on Computers in Education (ICCE 2008)* (pp. 931-934). Asia-Pacific Society for Computers in Education.

44. Zhang, Y., Kinshuk, **Jormanainen, I.**, & Sutinen, E. (2008). An Implementation of Agency Architecture in Educational Robotics. In *The 8th IEEE International Conference on Advanced Learning Technologies (ICALT 2008)* (pp. 194-198). Los Alamitos, CA: IEEE Computer Society.

45. **Jormanainen, I.**, Kärnä-Lin, E., Lahti, L., Pihlainen-Bednarik, K., Sutinen, E., Tarhio, J., & Virnes, M. (2007). A Framework for Research on Technology-enhanced Special Education. *In The 7th IEEE International Conference on Advanced Learning Technologies (ICALT 2007).*

46. **Jormanainen, I.**, Zhang, Y., Kinshuk, & Sutinen, E. (2007). Pedagogical Agents for Teacher Intervention in Educational Robotics Classes: Implementation Issues. In *The First IEEE International Workshop on Digital Game and Intelligent Toy Enhanced Learning (DIGITEL 2007)* (pp. 49-56). Los Alamitos, CA: IEEE Computer Society.

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48. **Jormanainen, I.**, Zhang, Y., Sutinen, E., & Kinshuk. (2006). Agency Architecture for Teacher Intervention in Robotics Classes. In Kinshuk, R. Koper, P. Kommers, P. Kirschner, D. G. Sampson, & W. Didderen (eds.), *The 6th IEEE International Conference on Advanced Learning Technologies (ICALT 2006)* (pp. 142-143). Los Alamitos, CA: IEEE Computer Society.

49. Beynon, M., Harfield, A., & **Jormanainen, I.** (2005). Varieties of Concretization: an illustrative case study. In T. Salakoski, T. Mäntylä, & M. Laakso (eds.), *Koli Calling 2005 - Fifth Koli Calling Conference on Computer Science Education* (pp. 153-156). Turku Center for Computing (TUCS).

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53. Eronen, P.J., **Jormanainen, I.**, & Virnes, M. (2003). Virre - Virtual Reflecting Tool. In J. Kurhila (ed.), *Third Annual Finnish/Baltic Sea Conference on Computer Science Education* (pp. 42-47). University of Helsinki, Department of Computer Science.

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Publications intended for professional communities

57. García-Peñalvo, F. J., Reimann, D., Tuul, M., Rees, A., & **Jormanainen, I**. (2016). An overview of the most relevant literature on coding and computational thinking with emphasis on the relevant issues for teachers. Belgium: TACCLE3 Consortium. doi:10.5281/zenodo.165123.
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Publications intended for the general public

59. Duveskog, M., Gil, A., J**ormanainen, I.**, Laamanen, M., Las Heras Escribano, A., Markinez Amozarrain, J., Mazorriaga, A. I., & Sutinen E. (2014). *SciKids' – The lost manual.* Joensuu Science Society.

Theses

60. **Jormanainen, I.** (2013). *Supporting teachers in unpredictable robotics learning environments*. Doctoral dissertation, School of Computing, University of Eastern Finland.
61. **Jormanainen, I.** (2004). *A Visual Interface for Concretizing Sorting Algorithms.* Masters' Thesis, University of Joensuu, Department of Computer Science.