

Alexander Steinmaurer - Publication List

Updated 31 August 2026

Peer-reviewed Publications

2026

Cipriano, B. P., Petrovska, O., Pombo, N., Battestilli, L., Farinetti, L., Glassey, R., Kasinidou, M., Olayinka, O., Shah, A., Steinmaurer, A., Vaidhiyanathan, R., & Weichert, J. (2026). Towards Improving CS Students' Generative AI Literacy. In *Proceedings of the 31st ACM Conference on Innovation and Technology in Computer Science Education V. 2* (pp. 789-790). ACM. <https://doi.org/10.1145/3803401.3812055>

Gürtl, S., Maier, J., Scharf, D., Gugacs, M., Gütl, C., & Steinmaurer, A. (2026). Supporting Tutors in Assessing Student Software Project Ideas with LLM-Based Pre-assessments. In *Innovation via Collaborative Learning in Engineering Education* (pp. 207-218). Springer. https://doi.org/10.1007/978-3-032-18888-5_20

2025

Bouvier, D. J., Cipriano, B. P., Glassey, R., Petrovska, O., Anderson, E., Birillo, A., Dougherty, R. E., Pettit, R., Pombo, N., Rahimi, E., Ramakrishnan, C., Steinmaurer, A., Taneja, S., Usman, M., & Vadaparty, A. (2025). The Rest of the Robots: Generative AI in Post-introductory Computing Education. In *Proceedings of the 2025 Working Group Reports on Innovation and Technology in Computer Science Education* (pp. 61-107). ACM. <https://doi.org/10.1145/3760545.3783970>

Bouvier, D. J., Cipriano, B. P., Glassey, R., Pettit, R., Anderson, E., Birillo, A., Dougherty, R. E., Hazzan, O., Petrovska, O., Pombo, N., Rahimi, E., Ramakrishnan, C., Steinmaurer, A., Taneja, S., Usman, M., Vadaparty, A., & Yeluripati, G. R. (2025). GenAI Integration in Upper-Level Computing Courses. In *Proceedings of the 30th ACM Conference on Innovation and Technology in Computer Science Education V. 2* (pp. 691-692). ACM. <https://doi.org/10.1145/3724389.3731276>

Gast, S., Felix, S. D., Steinmaurer, A., Juffinger, J., & Gruss, D. (2025). Real-World Study of the Security of Educational Test Systems. In *IEEE European Symposium on Security and Privacy Workshops (EuroS&P Workshops)* (pp. 588-599). IEEE. <https://doi.org/10.1109/EUROSPW67616.2025.00074>

Gürtl, S., Scharf, D., Thrainer, C., Gütl, C., & Steinmaurer, A. (2025). Design and Evaluation of an LLM-Based Mentor for Software Architecture in Higher Education Project Management Classes. In *Futureproofing Engineering Education for Global Responsibility* (pp. 375-386). Springer. https://doi.org/10.1007/978-3-031-83523-0_35

Kerschbaumer, D., Schatz, C., Ruprecht, T., Gütl, C., & Steinmaurer, A. (2025). Do Comments Matter? Investigating Students' Source Code Comment Behaviour and Its Relation to Academic Success in a CS1 Course. In *Futureproofing Engineering Education for Global Responsibility* (pp. 519-530). Springer. https://doi.org/10.1007/978-3-031-85649-5_51

Schnedlitz, F., Kerschbaumer, D., Steinmaurer, A., Lowe, D., & Gütl, C. (2025). To Complete or Not to Complete: Prediction and Classification of Dropouts in a CS1 Course. In *IEEE Global Engineering Education Conference (EDUCON)* (pp. 1-7). IEEE. <https://doi.org/10.1109/EDUCON62633.2025.11016432>

2024

Bajramović, A., Steinmaurer, A., & Gütl, C. (2024). Playing Video Games to Learn Computational Thinking? A Case Study of Game-Based Learning in Secondary CS Education. In *Towards a Hybrid, Flexible and Socially Engaged Higher Education* (pp. 474-482). Springer. https://doi.org/10.1007/978-3-031-53022-7_47

Kerschbaumer, D., Steinmaurer, A., & Gütl, C. (2024). A Code-Driven Exploration of Key C Language Concepts in a CS1 Class. In *Smart Mobile Communication & Artificial Intelligence* (pp. 397-408). Springer. https://doi.org/10.1007/978-3-031-54327-2_40

Malkoc, S., Steinmaurer, A., Gütl, C., Luttenberger, S., & Paechter, M. (2024). Coding Decoded: Factors Related to Achievement and Gender Differences in an Online Flipped Classroom Programming University Course. *Education Sciences*, 14(6), Article 634. <https://doi.org/10.3390/educsci14060634>

Pester, A., Tammaa, A., Gütl, C., Steinmaurer, A., & Abou El-Seoud, S. (2024). Conversational Agents, Virtual Worlds, and Beyond: A Review of Large Language Models Enabling Immersive Learning. In *IEEE Global Engineering Education Conference (EDUCON)* (pp. 1-6). IEEE. <https://doi.org/10.1109/EDUCON60312.2024.10578895>

Rivera, E., Steinmaurer, A., Fislser, K., & Krishnamurthi, S. (2024). Iterative Student Program Planning using Transformer-Driven Feedback. In *Proceedings of the 2024 ACM Conference on Innovation and Technology in Computer Science Education V. 1*. ACM. <https://doi.org/10.1145/3649217.3653607>

Steinmaurer, A., Dengel, A., Comanici, M., Buchner, J., Memminger, J., & Gütl, C. (2024). Immersive Learning in History Education: Exploring the Capabilities of Virtual Avatars and Large Language Models. In *Immersive Learning Research Network - 10th International Conference on Immersive Learning* (pp. 363-374). Springer. https://doi.org/10.1007/978-3-031-80475-5_26 [Best Short Paper Award]

2023

Dengel, A., Steinmaurer, A., Müller, L. M., Platz, M., Wang, M., Gütl, C., Pester, A., & Morgado, L. (2023). Research Agenda 2030: The Great Questions of Immersive Learning Research. In *Immersive Learning Research Network - 9th International Conference* (pp. 161-172). Springer. https://doi.org/10.1007/978-3-031-47328-9_12

Rebol, M., Steinmaurer, A., Gamillscheg, F., Pietroszek, K., Gütl, C., Ranniger, C., Hood, C., Rutenberg, A., & Sikka, N. (2023). CPR Emergency Assistance Through Mixed Reality Communication. In *Augmented Intelligence and Intelligent Tutoring Systems* (pp. 415-429). Springer. https://doi.org/10.1007/978-3-031-32883-1_38

Steinmaurer, A., Savic, R., Krugel, J., & Gütl, C. (2023). Analyzing Social Networks and Learning Content on a Discussion Forum of an Introductory Programming MOOC in Higher Education. In *IEEE Learning with MOOCS* (pp. 1-6). IEEE. <https://doi.org/10.1109/LWMOOCS58322.2023.10305937> [Best Paper Award]

2022

Rebol, M., Pietroszek, K., Ranniger, C., Hood, C., Rutenberg, A., Sikka, N., Steinmaurer, A., & Gütl, C. (2022). Work-in-Progress-Volumetric Communication for Remote Assistance Giving Cardiopulmonary Resuscitation. In *8th International Conference of the Immersive Learning Research Network* (pp. 1-3). IEEE. <https://doi.org/10.23919/ILRN55037.2022.9815989>

Steinmaurer, A., & Gütl, C. (2022). Implementation and Experiences of a Flipped Lecture Hall - A Fully Online Introductory Programming Course. In *Learning in the Age of Digital and Green Transition* (pp. 832-843). Springer. https://doi.org/10.1007/978-3-031-26876-2_79

Steinmaurer, A., Eckhard, D., Dreveny, J., & Gütl, C. (2022). Developing and Evaluating a Multiplayer Game Mode in a Programming Learning Environment. In *8th International Conference of the Immersive Learning Research Network* (pp. 1-8). IEEE. <https://doi.org/10.23919/ILRN55037.2022.9815973>

Steinmaurer, A., Schatz, C., Krugel, J., & Gütl, C. (2022). Analyzing Behavioral Patterns in an Introductory Programming MOOC at University Level. In *IEEE Learning with MOOCS* (pp. 114-119). IEEE. <https://doi.org/10.1109/LWMOOCS53067.2022.9927886>

Steinmaurer, A., Bajramović, A., Pollhammer, D., & Gütl, C. (2022). Learning Security Awareness in Email Communication Using a Platform for Digital Skill Teaching. In *IEEE International Conference on Teaching, Assessment and Learning for Engineering (TALE)* (pp. 38-45). IEEE. <https://doi.org/10.1109/TALE54877.2022.00015>

Steinmaurer, A., Mesarec, B., Mesarec, T., Pietroszek, K., & Gütl, C. (2022). Mobile XR Interface for Quantum Computing. In *Adjunct Proceedings of the 2022 ACM International Conference on Interactive Media Experiences* (pp. 243-248). <https://doi.org/10.6084/m9.figshare.20069621.v1>

2021

Pirker, J., Steinmaurer, A., & Karakas, A. (2021). Beyond Gaming: The Potential of Twitch for Online Learning and Teaching. In *Proceedings of the 26th ACM Conference on Innovation and Technology in Computer Science Education V. 1* (pp. 74-80). ACM. <https://doi.org/10.1145/3430665.3456324>

Steinmaurer, A., Sackl, M., & Gütl, C. (2021). Engagement in In-Game Questionnaires - Perspectives from Users and Experts. In *7th International Conference of the Immersive Learning Research Network* (pp. 1-7). IEEE. <https://doi.org/10.23919/ILRN52045.2021.9459373>

Steinmaurer, A., Tilanthe, A. K., & Gütl, C. (2021). Designing and Developing a Learning Analytics Platform for the Coding Learning Game sCool. In *New Realities, Mobile Systems and Applications* (pp. 547-558). Springer. https://doi.org/10.1007/978-3-030-96296-8_49

2020

Mosquera, C. K., Steinmaurer, A., Eckhardt, C., & Guetl, C. (2020). Immersively Learning Object Oriented Programming Concepts With sCool. In *6th International Conference of the Immersive Learning Research Network* (pp. 124-131). IEEE. <https://doi.org/10.23919/ILRN47897.2020.9155144>

Sackl, M., Steinmaurer, A., Cheong, C., Cheong, F., Filippou, J., & Gütl, C. (2020). sCool: Impact on Human-Computer Interface Improvements on Learner Experience in a Game-Based Learning Platform. In *Educating Engineers for Future Industrial Revolutions* (pp. 439-451). Springer. https://doi.org/10.1007/978-3-030-68198-2_41

2019

Steinmaurer, A., Pirker, J., & Gütl, C. (2019). sCool - Game-Based Learning in Computer Science Class: A Case Study in Secondary Education. *International Journal of Engineering Pedagogy*, 9(2), 35-50. <https://doi.org/10.3991/ijep.v9i2.9942>

2018

Steinmaurer, A., Pirker, J., & Gütl, C. (2018). sCool - Game Based Learning in STEM Education: A Case Study in Secondary Education. In *The Challenges of the Digital Transformation in Education* (pp. 614-625). Springer. https://doi.org/10.1007/978-3-030-11932-4_58

Book Chapters & Other Publications

2026

Steinmaurer, A., Kerschbaumer, D., & Gürtl, S. (2026). KI als Kollaborationspartner in der Informatiklehre. *fnma Magazin*, 43-45. <https://fnma.at/content/download/3484/23252?version=2>

2024

Müller, L. M., Domonkos, A., Steinmaurer, A., & Platz, M. (2024). MessbAR -- Entwicklung und Evaluation einer Augmented Reality App im Größenbereich Längen. In C. Bierbrauer, S. Ladel, & M. Platz (Eds.), *Lehren und Lernen mit digitalen Medien in der Primarstufe (PriMaMedien)*. WTM. <https://doi.org/10.37626/GA9783959873246.0>

2022

Steinmaurer, A., & Gütl, C. (2022). Computerspiele im Informatikunterricht. In H. Arndt (Ed.), *Digitale Spiele und fachliches Lernen* (pp. 211-247). FAU University Press. <https://doi.org/10.25593/978-3-96147-528-5>

Preprints & Manuscripts

2025

Gürtl, S., Schimetta, G., Kerschbaumer, D., Liut, M., & Steinmaurer, A. (2025). *Automated Feedback on Student-Generated UML and ER Diagrams Using Large Language Models*. [Preprint]. CoRR. <https://doi.org/10.48550/arXiv.2507.23470>

Kerschbaumer, D., Ruprechter, T., Helic, D., Gütl, C., & Steinmaurer, A. (2025). *Individual Efforts in Group Programming Assignment*. [Unpublished manuscript].

Liu, P., Lee, K. J. M., Steinmaurer, A., Picard-Deland, C., Carr, M., & Kitson, A. (2025). *DreamLLM-3D: Affective Dream Reliving using Large Language Model and 3D Generative AI*. [Preprint]. CoRR.
<https://doi.org/10.48550/arXiv.2503.16439>

Pöschko, J., Steinmaurer, A., Gütl, C., Dennerlein, S., Paechter, M., & Kemény, F. (2025). *The Influence of Explainability and Source Credibility on Students' Trust in Large Language Model-Based Programming Learning Tools*. [Unpublished manuscript].

2023

Steinmaurer, A., Dengel, A., Umfahrer, M., Zöhrer, K., Kogler, P., & Gütl, C. (2023). *A SMAwT Approach for Raising Social Media Awareness in Secondary CS Education -- Maybe a Little Bit Too Much?* [Unpublished manuscript].