List of Publications

https://orcid.org/0000-0002-9555-5820

Awards and Distinctions

2023 **Best Paper Award** at the 4th International Symposium on the Internet of Sounds, 2nd International Workshop on Multilayer Music Representation and Processing for the publication "*Improving a real-time music alignment algorithm for opera performances*" (co-authors: D. Gubbels, O. Shabelnyk, P. Reichl)

2016 **Honorable Mention Award** at the 34th ACM Conference on Human Factors in Computing Systems (CHI 2016) for the publication *"The Salome Experience: Opera Live Streaming and Beyond"* with the mention *"a wonderful and well described example of real-world design of a multi-stakeholder venue"* (co-authors: P. Reichl, C. Löw, S. Schröder, T. Schmidt, B. Sackl, V. Lushaj, F. Güldenpfennig, C. Widauer)

2014 **Best Paper Award** at the 7th International Conference on Advances in Computer-Human Interactions (ACHI 2014) for the publication "*Trombosonic: Designing and Exploring a New Interface for Musical Expression in Music and Non-Music Domains*" (co-author: G. Fitzpatrick)

Journal Articles (double blind peer reviewed)

2025 O. Hödl and L. Turchet: *The TMAP Framework: Describing the Design Space of Technology-Mediated Audience Participation in Live Music*. In IEEE Access, vol. 13, pp. 38593-38608, 2025, http://doi.org/10.1109/ACCESS.2025.3543064

2024 O. Hödl: *An electronic engineering approach for turning a Lego brick piano into a musical instrument*. In IEEE Access, vol. 12, pp. 51319-51329, 2024, https://doi.org/10.1109/ACCESS.2024.3386361

2020 O. Hödl, C. Bartmann, F. Kayali, C. Löw, P. Purgathofer: *Large-scale audience participation in live music using smartphones*. In: Journal of New Music Research, 49(2), pp. 192–207. https://doi.org/10.1080/09298215.2020.1722181

2020 F. Kayali, V. Schwarz, N. Luckner, O. Hödl: *Play it again - Digitale Musikinstrumente im MINT-Unterricht*. In: Journal für LehrerInnenbildung. 20, 1/2020, S. 54–66. https://doi.org/10.35468/jlb-01-2020_04

2018 F. Kayali, O. Hödl, C. Bartmann, U. Kühn, T. Wagensommerer, R. Mateus-Berr: *Learnings from an Iterative Design Process for Technology-Mediated Audience Participation (TMAP) using Smartphones*. In: EAI Endorsed Transactions on Creative Technologies, 5(14), pp. 1–7.

2014 O. Hödl, G. Fitzpatrick, S. Holland: *Exploring the Digital Music Instrument Trombosonic with Extreme Users and at a Participatory Performance*. In: International Journal on Advances in Intelligent Systems, 7(3 & 4), 2014. pp. 439–449.

Articles in conference proceedings (double blind peer reviewed)

2025 A. Gross, W. Gruber, O. Hödl, P. Reichl: *Tesremin – Controlling a Tesla Coil using a Theremin*. 22nd Sound and Music Computing Conference. Graz, Austria, 10.–12. July., pp. 275–282. https://doi.org/10.5281/zenodo.15837574

2025 S. Kashyap, C. Schaffer, W. Schwinger, G. Hartner, M. Kurz and O. Hödl: *A Framework for Overcoming Data Accessibility Challenges in Urban Microgrids for Smart Cities*. In Proceedings of 2nd International Conference on Advanced Innovations in Smart Cities (ICAISC), Jeddah, Saudi Arabia, February 9.–11., pp. 1-6. https://doi.org/10.1109/ICAISC64594.2025.10959532

2025 F. Kayali, V. Schwarz, N. Luckner, O. Hödl: *Digital Musical Instruments in STEM Teaching and Learning*. In R. Jake Cohen (Ed.), Proceedings of Society for Information Technology & Teacher Education International Conference (pp. 2055-2057). Orlando, FL, USA: Association for the Advancement of Computing in Education (AACE). https://www.learntechlib.org/primary/p/226024

2024 M. Waldhör, O. Hödl, P. Reichl: BrickMusicTable: *A LEGO brick-based tabletop sequencer*. 23rd International Conference on Mobile and Ubiquitous Multimedia (MUM 2024), Stockholm, Sweden, December 1.–4. https://doi.org/10.1145/3701571.3701592

2024 S. Kashyap, C. Schaffer, T. Fischer, M. Zauner, F. Fischer, M. Kurz, G. Hartner, S. Grünberger, O. Hödl: *Empowering Energy Communities and P2P Energy Sharing: A Novel End-to-End Ecosystem for Planning, Deployment, and Operation*. 13th DACH+ Energy Informatics Conference, Lugano, Switzerland, October 9.–11. https://doi.org/10.1145/3717413.3717436

2023 V. Karagiannis, S. Kashyap, N. Zechner, O. Hödl, G. Hartner, M. Llorca, T. Jamasb, S. Grünberger, M. Kurz, C. Schaffer, S. Schulte: *A Framework for Enabling Cloud Services to Leverage Energy Data*. 11th IEEE International Conference on Cloud Engineering (IC2E 2023), Boston, Massachusetts, USA, September 25.–28. https://ieeexplore.ieee.org/document/10305833

2023 V. Karagiannis, A. Al-Akrawi, O. Hödl: *Data Sovereignty at the Edge of the Network*. 7th IEEE International Conference on Fog and Edge Computing (ICFEC 2023), Bangalore, India, May 1.–4. https://doi.org/10.1109/ICFEC57925.2023.00013

2022 O. Hödl, A. Rafetseder, P. Hu, F. Kayali: *STEAM for non-novice STEM students with Digital Musical Instruments*. Audio Mostly Conference 2022, St. Pölten, Austria, September 6.-9. https://doi.org/10.1145/3561212.3561235

2022 P. Hu, O. Hödl, P. Reichl, F. Kayali, I. Eibensteiner, B. Taufner, S. Schefer-Wenzl, I Miladinovic: *muco: A Music Computing Learning Application*. In: Sound and Music Computing Conference 2022, Saint-Étienne, France, June 4.-12. https://zenodo.org/record/6572881

2019 O. Hödl: *'Blending Dimensions' when Composing for DMI and Symphonic Orchestra*. In: Proceedings of the International Conference on New Interfaces for Musical Expression 2019, Porto Alegre, Brazil, 198–203. https://doi.org/10.5281/zenodo.3672922

2019 O. Hödl, F. Kayali, G. Fitzpatrick, S. Holland: *TMAP Design Cards for Technology-Mediated Audience Participation in Live Music*. In: Holland S., Mudd T., Wilkie-McKenna K., McPherson A., Wanderley M. (eds.) New Directions in Music and Human-Computer Interaction. Springer Series on Cultural Computing, pp. 41–59. https://doi.org/10.1007/978-3-319-92069-6_3

2018 S. Holland, A. Bouwer, O. Hödl: *Haptics for the Development of Fundamental Rhythm Skills, Including Multi-limb Coordination*. In: Papetti, S. Saitis, C. (Eds.) Springer Series on Touch and Haptic Systems: Musical Haptics, Springer Open, pp. 215–237. https://doi.org/10.1007/978-3-319-58316-7_11

2018 O. Hödl, P. Reichl, P. Oberhauser: *cosy:sonics - A Mobile App for Triggering Technology Reflection Through Immersive Audience Experience*. In: Proceedings of Forum Medientechnik 2018, University of Applied Science St. Pölten, Austria. pp. 17–24. http://ceur-ws.org/Vol-2299/paper2.pdf

2017 F. Kayali, O. Hödl, G. Fitzpatrick, P. Purgathofer, A. Filipp, R. Mateus-Berr, U. Kühn, T. Wagensommerer, J. Kretz, S. Kirchmayr: *Playful Technology-Mediated Audience Participation in a Live Music Event*. In: Proceedings of CHI Play 2017, Amsterdam, Netherlands, pp. 437–443. https://doi.org/10.1145/3130859.3131293

2017 F. Kayali, C. Bartmann, O. Hödl, R. Mateus-Berr, M. Pichlmair: *Poème Numérique: Technology-Mediated Audience Participation (TMAP) using Smartphones and High-Frequency Sound IDs*. In: INTETAIN 2016, Vol. LNICST 178, pp. 254–258.

2017 K. Spiel, K. Werner, O. Hödl, L. Ehrenstrasser, G. Fitzpatrick: *Creating Community Fountains by (Re-)Designing the Digital Layer of Way-finding Pillars*. In: Proceedings of ACM MobileHCI 2017, Vienna, Austria, pp. 1–8. https://dl.acm.org/doi/10.1145/3098279.3122135

2017 O. Hödl, G. Fitzpatrick, S. Holland, F. Kayali: *Design Implications for Technology-Mediated Audience Participation in Live Music*. In: Proceedings of Sound and Music Computing 2017, Helsinki, Finland, pp. 28–34. https://eprints.cs.univie.ac.at/5451/1/SMC17_p28-FINAL.pdf

2016 P. Reichl, C. Löw, S. Schröder, T. Schmidt, B. Schatzl, V. Lushaj, O. Hödl, F. Güldenpfennig, C. Widauer: *The Salome Experience: Opera Live Streaming and Beyond*. In: Proceedings of ACM SIGCHI 2016, San Jose, USA. pp. 728–737. https://doi.org/10.1145/2851581.2851588

2016 F. Güldenpfennig, O. Hödl, P. Reichl, C. Löw, A. Gartus, M. Pelowski: *TASK: Introducing The Interactive Audience Sensor Kit*. In: Proceedings of TEI 2016, Eindhoven, Netherlands. pp. 484–454.

2014 O. Hödl, G. Fitzpatrick, S. Holland: *Experimence: Considerations for Composing a Rock Song for Interactive Audience Participation*. In: Proceedings of the 40th International Computer Music Conference and the 11th Sound and Music Computing 2014, Athens, Greece. pp. 169–176. http://hdl.handle.net/2027/spo.bbp2372.2014.028

2014 O. Hödl, G. Fitzpatrick: *UniCoMP -An Approach Towards Flexibility, Versatility and Liberty of Action on Stage*. In: Proceedings of the European Immersive Education (iED) Summit 2014, Vienna, Austria, pp. 118–125.

2014 S. Holland, R. Wright, A. Wing, T. Crevoisier, O. Hödl, M. Canelli: *A Gait Rehabilitation pilot study using tactile cueing following Hemiparetic Stroke*. In: Proceedings of the 8th International Conference on Pervasive Computing Technologies for Healthcare, Oldenburg, Germany. pp. 402–405. https://doi.org/10.4108/icst.pervasivehealth.2014.255357

2014 O. Hödl, G. Fitzpatrick: *Trombosonic: Designing and Exploring a New Interface for Musical Expression in Music and Non-Music Domains*. In: Proceedings of the Seventh International Conference on Advances in Computer-Human Interactions 2014, Barcelona, Spain, pp. 54–59. https://publik.tuwien.ac.at/files/PubDat_235353.pdf

2013 F. Kayali, N. Luckner, O. Hödl, G. Fitzpatrick, P. Purgathofer, T. Stamm, D. Schlager-Jaschky, E. Mosor: *Elements of Play for Cognitive, Physical and Social Health in Older Adults*. In: Proceedings of SouthCHI 2013, Maribor, Slovenia. Lecture Notes in Computer Science, Volume 7946, pp. 296–313.

2013 O. Hödl, G. Fitzpatrick: *Exploring the Design Space of Hand-Controlled Guitar Effects for Live Music*. In: Proceedings of the International Computer Music Conference 2013, Perth, Australia, pp. 69–76. http://hdl.handle.net/2027/spo.bbp2372.2013.008

2013 N. Luckner, F. Kayali, O. Hödl, P. Purgathofer, G. Fitzpatrick, E. Mosor, D. Schlager-Jaschky, T. Stamm: *From Research to Design - Sketching a Game to Trigger Reminiscence in Older Adults*. In: Proceedings of SouthCHI 2013, Maribor, Slovenia. Lecture Notes in Computer Science, Volume 7946, pp. 617–624. https://publik.tuwien.ac.at/files/PubDat_221665.pdf

2012 O. Hödl, F. Kayali, G. Fitzpatrick: *Designing interactive audience participation using smart phones in a musical performance*. In: Proceedings of the International Computer Music Conference (ICMC) 2012, Ljubljana, Slovenia. pp. 236–241. http://hdl.handle.net/2027/spo.bbp2372.2012.042

Conference workshops organised

2025 M. Kurz, O. Hödl, G. Hartner, C. Schaffer, S. Grünberger, S. Kashyap: *EEL-HCI 2025: Second International Workshop on Empowering Energy Literacy - HCI Strategies for Accessible Data Engagement*. Mensch und Computer 2025 - Workshopband. Gesellschaft für Informatik e.V. MCI: Workshop. Chemnitz, Germany, August 30.–September 3.

2024 M. Kurz, O. Hödl, G. Hartner, C. Schaffer, S. Grünberger, S. Kashyap: *EEL-HCI 2024: First International Workshop on Empowering Energy Literacy - HCI Strategies for Accessible Data Engagement*. Mensch und Computer 2024 - Workshopband. Gesellschaft für Informatik e.V. MCI: Workshop. Karlsruhe, Germany, September 1. –4. https://doi.org/10.18420/muc2024-mci-ws08-110

Workshop Papers and Abstracts (peer reviewed)

2025 N. Zechner, O. Hödl: *A Field Study on the User Experience of Residential Energy Data Access through Smart Meters*. Second International Workshop on Empowering Energy Literacy - HCI Strategies for Accessible Data Engagement (EEL-HCI) at the Mensch und Computer 2025 – Workshopband, Gesellschaft für Informatik e.V., Chemnitz, Germany, August 31.–September 3., https://doi.org/10.18420/muc2025-mci-ws03-180

2023 O. Hödl, D. Gubbels, O. Shabelnyk, P. Reichl: *Improving a real-time music alignment algorithm for opera performances*. Second International Workshop on Multilayer Music Representation and Processing (MMRP23) at the 4th International Symposium on the Internet of Sounds, Pisa, Italy, October 27. https://ieeexplore.ieee.org/document/10335462

2018 F. Kayali, P. Klein, O. Hödl: *Making Digital Music Instruments: Design as a Means of Teaching Creative and Technological Literacy*. Abstract and Presentation: Teaching Artistic Research Conference, Vienna, Austria, June 28.–30.

2018 R. Mateus-Berr, J. Delgado, A. Lerchbaumer, U. Kühn, F. Kayali, O. Hödl: *Breaking the Wall for Critical Requests on Digital Evolution 4.0*. Abstract and Presentation: INTERVENTIONS: Scientific and Social Interventions in Art Education European InSEA Congress 2018, Finnland, June 18, pp. 243–244.

2017 F. Kayali, O. Hödl, R. Mateus-Berr: *The Art-based Research Project Breaking The Wall*. Poster presentation: Open House 2017, Zentrum Fokus Forschung, University of Applied Arts Vienna, Austria, October 25.

2016 O. Hödl, F. Kayali, G. Fitzpatrick, S. Holland: *TMAP Design Cards for Technology-Mediated Audience Participation in Live Music*. Extended Abstract and Presentation: Music and HCI workshop, ACM SIGCHI 2016, San Jose, USA.

2015 O. Hödl, F. Kayali, G. Fitzpatrick, S. Holland: *Towards Bridging The Gap In A Musical Live Performance*. Abstract and Presentation: Vienna Talk 2015 on Music Acoustics - Bridging the Gaps, Vienna; June 16.–19. In: Proceedings of the Third Vienna Talk on Music Acoustics, S. 221.

2015 P. Reichl, C. Löw, S. Schröder, M. Balinova, H. Weisgrab, O. Hödl, F. Güldenpfennig, C. Panigl, R. Cravos, C. Widauer, O. Láng, O. Zenner: *The Salome Experience - Live Streaming of Opera Performances for Large Audiences*. Extended Abstract and Presentation: Live Theatre Broadcast Symposium, York, UK, June 25.

Invited Papers

2025 C. Joglekar, A. Monti, P. Kulkarni, A. Garcia Mangas, A. Michalitsi-Psarrou, A. Medela, B. Schmitt, D. Jimenez, E. Maqueda, G. Hartner, G. Lipari, L. Karg, M. Kollenstart, M. Stroot, A. Papafragkakis, M. Galluccio, M. Bertoncini, M. Fantino, O. Hödl, S. Kosslers, T. Tsitsanis, N. Wirtz. *Lessons Learned from Energy Data Spaces Cluster Projects: Challenges, Insights, and Best Practices*. Interoperability Network for the Energy Transition (int:net). https://doi.org/10.5281/zenodo.17117180

2025 A. Dognini, A. Monti, A. Kung, A. Medela, C. Joglekar, C. Schaffer, D. Stampatori, D. Jimenez, E. Maqueda, F. Coelho, F. Mancel, G. Hartner, G. Lipari, J. Valino, J. Jimeno Huarte, L. Guitart, L. Schmitt, L. Karg, M. Kollenstart, M. Santos Mugica, M. Kurz, M. Arles, M. Stroot, M. Baka, M. Galluccio, M. Bertoncini, M. Fantino, O. Hödl, O. Genest, R. Bessa, R. Dornmair, S. Jimenez, T. Tsitsanis, T. Strasser, V. Berkhout. *Blueprint of the Common European Energy Data Space* (Version 3.0). Interoperability Network for the Energy Transition (int:net). https://zenodo.org/records/17116750

2024 O. Hödl, G. Hartner, A. Jodkowski, M. Kurz, C. Schaffer. *EDDIE – eine europäische verteilte Dateninfrastruktur für Energie*. OVE e+i elektrotechnik und informationstechnik, Ausgabe 6.2024, https://www.ove.at/ove-news/details/horizon-europe-projekt-eddie/

2015 G. Fitzpatrick, F. Güldenpfennig, O. Hödl, H. Tellioglu, W. Zagler, M. Pohl, R. Ganhör, P. Mayer, C. Frauenberger: *Organisational Overview: Institute for Design and Assessment of Technology*, Vienna University of Technology (TU Wien) Interact 2015, Bamberg, Germany.

Theses

2023 O. Hödl: *Human-centered Design, Development and Evaluation of IT Applications in Interdisciplinary Settings from Music to Education and Energy*. Habilitation Thesis, University of Vienna.

2016 O. Hödl: *The Design of Technology-Mediated Audience Participation in Live Music*. PhD Thesis, Vienna University of Technology. https://doi.org/10.34726/hss.2016.37385

2005 O. Hödl: *A case study on project management process improvement at a turn-key software solution company*. Diploma Thesis, Vienna University of Technology.

Publications submitted and currently under review

2025 F. Güldenpfennig, N. Zechner, D. Tîrcob, J. Köck, D. Köstlin, O. Hödl: *The Socio-Technical Energy Triad: Bridging Industry, Users, and Systems in Digital Energy Services*. Diploma Thesis, Vienna University of Technology. *Submitted to the ACM CHI 2026 conference.*