XR refers to technology-mediated experiences that combine digital and biological realities. Technologies supporting the creation of XR encompasses a wide range of hardware and software, including sensory interfaces, applications, and infrastructures, that enable content creation for virtual reality (VR), mixed reality (MR), augmented reality (AR), cinematic reality (CR), 360-degree video, and more. With these tools, users generate new forms of reality by bringing digital objects into the physical world and/or bringing physical world objects into the digital world. XR technologies have applications in all sectors of education and training, from early schooling through to higher education, workforce development, and lifelong learning.

This special issue of the Springer journal Virtual Reality focuses on the use of XR for creating environments and experiences that excite, inspire, and engage learners in immersive ways. Of interest are reports of both research studies and applications covering the entire spectrum of immersive platform types, including desktop, mobile, wearable and room-based (e.g., CAVE). Interdisciplinary contributions are especially welcome, and authors are encouraged to think creatively in terms of how they might frame their work to accommodate different conceptions of and perspectives on immersion.

Most importantly, in order to be considered for publication in the special issue, papers must demonstrate a potential to help advance research and/or practice in the field of XR from a technical, theoretical/conceptual, empirical, and/or methodological perspective. Papers that engage deeply with the implications for the broader XR field arising from the work will be given higher priority, while papers focusing largely on reporting applications of the technology within educational/learning contexts are also welcome but will receive lower priority.

**POTENTIAL TOPIC AREAS**

1. Pedagogy and learning design for XR and immersive environments
2. Technical infrastructure and standards for supporting XR and immersive learning
3. XR and immersive technologies in early childhood and K-12 education
4. XR and immersive technologies in higher education
5. XR and immersive technologies in vocational/workplace training
6. XR and immersive technologies in informal and lifelong learning
7. Collaborative learning (co-located or distributed) with XR and immersive technologies
8. Simulation-based learning with XR and immersive technologies
9. Intelligent, adaptive, and personalized learning in XR and immersive environments
10. Serious games for learning based on XR and immersive technologies
11. Promoting access and equity in education through XR and immersive technologies
PAPER TYPES

- Original research paper*
- Theoretical/conceptual paper
- Position paper

*Submission of data with manuscripts is encouraged, but not required. Also, links to online locations from which the XR-based immersive environments may be accessed and/or downloaded is strongly encouraged.

MANUSCRIPT PREPARATION AND SUBMISSION

For author guidelines and submission instructions, please see the journal’s web site at https://www.springer.com/computer/image+processing/journal/10055. Manuscripts will not be accepted via email.

IMPORTANT DATES

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<tr>
<th>Event</th>
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<tr>
<td>Full manuscripts due</td>
<td>December 14, 2018 February 22, 2019</td>
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<tr>
<td>Notification of review outcomes</td>
<td>March 8, 2019 May 3, 2019</td>
</tr>
<tr>
<td>Revised manuscripts due</td>
<td>May 31, 2019 June 28, 2019</td>
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<td>Anticipated publication of special issue</td>
<td>Late 2019</td>
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This special issue is being created in conjunction with a special track on “XR and Immersive Learning Environments” at the IEEE TALE 2018 Conference (http://www.tale2018.org/xr), co-organized with the Immersive Learning Research Network (iLRN at http://www.immersivelrn.org/). Though not mandatory, prospective authors for the special issue may wish to submit shorter, preliminary versions of their papers for presentation at TALE 2018, with a view to further developing and expanding those papers for consideration for the special issue (subject to additional peer review in accordance with the journal’s policies). **Note that attendance and presentation at TALE are not prerequisites for submitting manuscripts for consideration for the special issue.**

GUEST EDITORS

- **Mark J. W. Lee** – Adjunct Senior Lecturer, School of Education, Charles Sturt University, Australia; Visiting Faculty, Entertainment Technology Center, Carnegie Mellon University, USA
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The guest editors are directors of the Immersive Learning Research Network (iLRN), an international organization of developers, educators, and research professionals collaborating to develop the scientific, technical, and applied potential of immersive learning.

Inquiries about the special issue should be directed to ilrn.specialissues@gmail.com.