

## Links shared in the Zoom chat

### Links shared by Genevieve

- [FrameVR](#), a platform where you can create immersive collaboration spaces. At this link you can explore Genevieve's research in virtual reality:  
<https://framevr.io/ilrn2021-showcasesingularity>
- [PoseNet](#) examples created by Genevieve using [P5.js](#) and its [machine learning library ML5](#), illustrating how these tools can be used to capture real-time biometric data:
  - <https://editor.p5js.org/smithnunes/sketches/ZQSnnwFN6> (facemesh\_novideo)
  - <https://editor.p5js.org/smithnunes/sketches/Jr7dVR1Py> (simple full body)
  - <https://editor.p5js.org/smithnunes/sketches/WZpSwlZ89> (mirror and threshold filters)
- Examples of data ethics frameworks from different organisations:
  - UK Government:  
<https://www.gov.uk/government/publications/data-ethics-framework/data-ethics-framework-2020#overarching-principles>
  - IEEE Standards Association: <https://standards.ieee.org/ieee/2089/7633/>
  - Children's Code: <https://ico.org.uk/for-organisations/childrens-code-hub/>
  - The Alan Turing Institute: <https://www.turing.ac.uk/research/data-ethics>
  - Australian Brain Alliance: <https://doi.org/10.1016/j.neuron.2019.12.019>
  - IEEE Brain's Neuroethics Framework (2023 minimum):  
<https://brain.ieee.org/wp-content/uploads/2022/05/Neuroethics-Education-Pre-ambled-branded.pdf>. *Note: Genevieve is the education subcommittee co-chair for this framework and will be running a design workshop to get educator feedback (date tbc).*
- This spreadsheet of Genevieve's own brain data:  
<https://docs.google.com/spreadsheets/d/14fjwVerAJE4OTjws9ZEhr6AaGGGxofW7ko9eKyEIOMk/edit?usp=sharing>
- Zero Trust Methodology (mentioned during the Q&A section of the seminar):  
<https://docs.microsoft.com/en-us/training/modules/zero-trust-introduction/> Microsoft also offers many other training courses on data ethics topics:  
<https://docs.microsoft.com/en-us/training/courses/browse/?locales=en>
- Smith-Nunes, G., & Shaw, A. (2022, May). Doctoral Colloquium—ME++ Data Ethics of Biometrics Through Ballet and AR. In *2022 8th International Conference of the*

## Raspberry Pi Foundation research seminar

ME++: Data ethics for the computing classroom through biometrics, ballet, and AR

*Genevieve Smith-Nunes (University of Cambridge)*

*Immersive Learning Research Network (iLRN)* (pp. 1-3). IEEE. Available at:

<https://ieeexplore.ieee.org/abstract/document/9815898>

- The following papers, books and talks by other researchers:
  - Farahany, N. A. (2012). Incriminating thoughts. *Stan. L. Rev.*, 64, 351.  
[https://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=5321&context=faculty\\_scholarship](https://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=5321&context=faculty_scholarship)
  - Nita Farahany's TED talk, [\*When technology can read minds, how will we protect our privacy?\*](#)
  - The book [\*Me++: The Cyborg Self and the Networked City\*](#) by William J. Mitchell, which inspired the title of Genevieve's talk
  - Qammaz, A., & Argyros, A. A. (2019, September). MocapNET: Ensemble of SNN Encoders for 3D Human Pose Estimation in RGB Images. In BMVC (p. 46). Available at:  
<https://bmvc2019.org/wp-content/uploads/papers/0710-paper.pdf>

### Links shared by seminar participants

- A visual illustration of a hand tracking project for gesture recognition, using OpenCV, MediaPipe and Python: <https://www.youtube.com/watch?v=rGqMblf5pkk>
- Footage of a dance performance with a motion tracking instrument that uses Raspberry Pi camera tracking and laser to visualise movements of the dancer: <https://youtu.be/bDkUWHG0uTw>
- An introductory resource for younger students that includes materials and a curriculum to run a workshop on movement-focused AI: <https://dancingwithai.media.mit.edu/>