

Dr. Kirsten Ellis
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Biography

Dr Kirsten Ellis has a creative and technical background and has experience in designing, developing and evaluating systems for people with unique requirements. Her research interests include human computer interaction and how technology can create a more inclusive society. She had developed multiple resources using a variety of technologies including on the Nintendo DS lite, iPad, iPhone, Android and the Microsoft Kinect. She also plays with maker technologies including eTextiles to make creative pieces and artefacts to assist people. In addition, she also researches innovative technologies to create tangible objects as authentic learning experiences.

Making for All

Dr Kirsten Ellis is involved with creating a variety of activities to engage everyone, no matter what their abilities are, in STEM Making. By redesigning activities we can make it possible for everyone to engage in the making process. The items use off the shelf technology that are hacked, modified and used in different ways to facilitate activities that show the creative and fun side to technology that is then of interest to a more diverse range of users and developers.

Australian Sign Language

Dr Kirsten Ellis researches teaching sign language to hearing people so that they can interact with deaf people in a common language that is fully accessible to all participants and she has designed and developed multiple resources to enable this. Kirsten has conducted research in how the use a whole range of technologies to improve the learning experience and learning outcomes.

Young Children and Technology

Kirsten Ellis has researched two year old children using technology in terms of behavior, interaction style and concentration span. This work has tracked how new technologies are making computer accessible to even the youngest members of the community.

Digital Health

Kirsten is currently undertaking research on how to utilise the distributed nature of the internet to facilitate large scale medical projects. These project deal with the collection and distribution of information in a medical context that has not been previously possible.

Qualifications

Information Technology, Doctor of Philosophy, Monash University
Award Date: 16 Oct 2008

Information Technology, Masters of IT (Research), Monash University
Award Date: 1 Jan 2002

Information Management, Bachelor of Applied Science, Deakin University
Award Date: 1 Jan 1995

Research outputs

A gallery in my hand: A multi-exhibition investigation of accessible and inclusive gallery experiences for blind and low vision visitors

Butler, M., Tandori, E., Dziekan, V., Ellis, K., Hall, J., Holloway, L., Nagassa, R. & Marriott, K., 22 Oct 2023, *Proceedings of the 25th International ACM SIGACCESS Conference on Computers and Accessibility*. Brady, E. & Wolters, M. (eds.). New York NY USA: Association for Computing Machinery (ACM), 15 p. 9

Assessing calf exercise fidelity among people with Achilles tendinopathy using videos recorded via Zoom®: an observational study

Whale, R., Hasani, F., Haines, T., Munteanu, S. E., Ellis, K., Patel, S., Buchholtz, K., Warne, J., Vallance, P. & Malliaras, P., 13 Feb 2023, In: *Disability and Rehabilitation*. 46, 4, p. 697-704 8 p.

"Piece it together": Insights from one year of engagement with electronics and programming for people with intellectual disabilities

Ellis, K., Kruesi, L., Ananthanarayan, S., Senaratne, H. & Lindsay, S., 2023, *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems*. Mueller, S., R. Williamson, J. & L. Wilson, M. (eds.). New York NY USA: Association for Computing Machinery (ACM), 17 p. 219

eMaking as a Pathway for Further Education: Learners Living with an Intellectual Disability

Ellis, K., Kidman, G. & Tan, H., 2023, *Educating Gifted, Talented, Creative and Dissimilar Learners: Imagining the Future*. Barkatsas, T. (ed.). Leiden, The Netherlands.: Brill, p. 161-179 19 p. (Global Education in the 21st Century Series; vol. 6).

A critical review of multimodal-multisensor analytics for anxiety assessment

Senaratne, H., Oviatt, S., Ellis, K. & Melvin, G., Oct 2022, In: *ACM Transactions on Computing for Healthcare*. 3, 4, 42 p., 3556980.

Animations at your fingertips: using a refreshable tactile display to convey motion graphics for people who are blind or have low vision

Holloway, L., Ananthanarayan, S., Butler, M., De Silva, M. T., Ellis, K., Goncu, C., Stephens, K. & Marriott, K., 2022, *ASSETS'22 - Proceedings of the 24th International ACM SIGACCESS Conference on Computers and Accessibility*. Shinohara, K. & Ludi, S. (eds.). New York NY USA: Association for Computing Machinery (ACM), 16 p. 32

Designing with and for people with intellectual disabilities

Soares Guedes, L., Gibson, R. C., Ellis, K., Sitbon, L. & Landoni, M., 2022, *ASSETS'22 - Proceedings of the 24th International ACM SIGACCESS Conference on Computers and Accessibility*. Shinohara, K. & Ludi, S. (eds.). New York NY USA: Association for Computing Machinery (ACM), 6 p. 106

Logic Bonbon: exploring food as computational artifact

Deng, J., Olivier, P., Andres, J., Ellis, K., Wee, R. & Mueller, F., 2022, *Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems*. Drucker, S., Williamson, J. & Yatani, K. (eds.). New York NY USA: Association for Computing Machinery (ACM), 21 p. 47

Therapist-Informed design directions for mobile assistive technologies for anxiety

Senaratne, H., Melvin, G., Oviatt, S. & Ellis, K., 2022, *15th EAI International Conference, Pervasive Health 2021 Virtual Event, December 6–8, 2021 Proceedings*. Lewy, H. & Barkan, R. (eds.). Cham Switzerland: Springer, p. 164-182 19 p. (Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering, LNICST; vol. 431 LNICST).

TronicBoards: an accessible electronics toolkit for people with intellectual disabilities

Senaratne, H., Ananthanarayan, S. & Ellis, K., 2022, *Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems*. Drucker, S., Williamson, J. & Yatani, K. (eds.). New York NY USA: Association for Computing Machinery (ACM), 15 p. 594

Inclusive data visualization for people with disabilities

Marriott, K., Lee, B., Butler, M., Cutrell, E., Ellis, K., Goncu, C., Hearst, M., McCoy, K. & Szafir, D. A., Apr 2021, *Interactions*, 28, 3, p. 47-51 5 p.

The next billion users of visualization

Jena, A., Butler, M., Dwyer, T., Ellis, K., Engelke, U., Kirkham, R., Marriott, K., Paris, C. & Rajamanickam, V., Mar 2021, In: *IEEE Computer Graphics and Applications*. 41, 2, p. 8-16 9 p.

A multimodal dataset and evaluation for feature estimators of temporal phases of anxiety

Senaratne, H., Kuhlmann, L., Ellis, K., Melvin, G. & Oviatt, S., 2021, *Proceedings of the 2021 International Conference on Multimodal Interaction*. Oviatt, S., Ali Salah, A. & Zhao, G. (eds.). New York NY USA: Association for Computing Machinery (ACM), p. 52-61 10 p.

TapeBlocks: a making toolkit for people living with intellectual disabilities

Ellis, K., Dao, E., Smith, O., Lindsay, S. & Olivier, P., 2021, *CHI'21 - Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*. Bjørn, P. & Drucker, S. (eds.). New York NY USA: Association for Computing Machinery (ACM), 12 p. 280

A survey of dynamic parameter setting methods for nature-inspired swarm intelligence algorithms

Phan, H. D., Ellis, K., Barca, J. C. & Dorin, A., Jan 2020, In: *Neural Computing and Applications*. 32, 2, p. 567-588 22 p.

Bespoke reflections: creating a one-handed braille keyboard

Ellis, K., De Vent, R., Kirkham, R. & Olivier, P., 2020, *ASSETS '20 - The 22nd International ACM SIGACCESS Conference on Computers and Accessibility*. Nicolau, H. & Moffatt, K. (eds.). New York NY USA: Association for Computing Machinery (ACM), p. 1-13 13 p. 3417019

Feedback strategies for embodied agents to enhance sign language vocabulary learning

Phan, H. D., Ellis, K., Dorin, A. & Olivier, P., 2020, *Proceedings of the 20th ACM International Conference on Intelligent Virtual Agents, IVA 2020*. Vilhjalmsjon, H., Sequeira, P. & S. Cross, E. (eds.). New York NY USA: Association for Computing Machinery (ACM), 8 p. 47

Building capacity: eTextile tactile storybook workshops

Holloway, L., Ellis, K. & Curtin, L., 2019, *ASSETS '19 - The 21st International ACM SIGACCESS Conference on Computers and Accessibility*. Azenkot, S. & Kane, S. (eds.). New York NY USA: Association for Computing Machinery (ACM), p. 597-599 3 p.

Designing efficacious mobile technologies for anxiety self-regulation

Senaratne, H., Ellis, K., Oviatt, S. & Melvin, G., 2019, *Extended Abstracts of the 2019 CHI Conference on Human Factors in Computing Systems*. Cox, A. & Kostakos, V. (eds.). New York NY USA: Association for Computing Machinery (ACM), 6 p. LBW1819

MIC, an interactive sign language teaching system

Phan, H. D., Ellis, K. & Dorin, A., 2018, *Proceedings of the 30th Australian Computer-Human Interaction Conference (OzCHI 2018): Melbourne 4 – 7 December 2018*. McKay, D., Waycott, J., Morrison, A., Hee-Jeong Choi, J., Lugmayr, A., Billinghamurst, M., Kelly, R., Buchanan, G. & Stevenson, D. (eds.). New York NY USA: Association for Computing Machinery (ACM), p. 544-547 4 p.

Toddler techie touch generation

Ellis, K., Power, M. & Albrecht, D. W., 2018, *Proceedings of the 2018 Annual Symposium on Computer-Human Interaction in Play*. Toups, Z. & Wyeth, P. (eds.). New York NY USA: Association for Computing Machinery (ACM), p. 127-139 13 p.

Turn it over: a demonstration that spatial keyboards are logical for braille

Ellis, K. & Holloway, L., 2018, *ASSETS'18 - Proceedings of the 20th International ACM SIGACCESS Conference on Computers and Accessibility: October 22–24, 2018 Galway, Ireland*. McGrenere, J. & Flatla, D. (eds.). New York NY USA: Association for Computing Machinery (ACM), p. 459-461 3 p.

Impact of attention training on academic achievement, executive functioning and behaviour in children with developmental disabilities: A randomised controlled trial

Kirk, H., Gray, K., Ellis, K., Taffe, J. & Cornish, K., Mar 2017, In: *American Journal on Intellectual and Developmental Disabilities*. 122, 2, p. 97-117 21 p.

Computerised attention training for children with intellectual and developmental disabilities: a randomised controlled trial

Kirk, H. E., Gray, K. M., Ellis, K., Taffe, J. & Cornish, K. M., Dec 2016, In: *Journal of Child Psychology and Psychiatry*. 57, 12, p. 1380-1389 10 p.

A design science exploration of a visual-spatial learning system with feedback

Ellis, K. A., Fisher, J. L., Willoughby, L. J. V. & Barca, J. C., 1 Jan 2015, *Proceedings of the 26th Australasian Conference on Information Systems (ACIS 2015)*. Burstein, F., Scheepers, H. & Deegan, G. (eds.). Adelaide SA Australia: Australasian Conference on Information Systems, p. 1 - 13 13 p.

Errors and feedback in the beginner Auslan classroom

Willoughby, L. J. V., Linder, S., Ellis, K. A. & Fisher, J. L., 2015, In: *Sign Language Studies*. 15, 3, p. 322 - 347 26 p.

Taking a user centred design approach for designing a system to teach sign language

Fisher, J. L., Ellis, K. A., Willoughby, L. J. V. & Barca, J. C., 2014, *Proceedings of the 25th Australasian Conference on Information Systems (ACIS 2014)*. Wang, W. & Pauleen, D. (eds.). Auckland New Zealand: Australasian Conference on Information Systems, p. 1 - 10 10 p.

Exploring sensor gloves for teaching children sign language

Ellis, K. A. & Barca, J. C., 2012, In: *Advances in Human - Computer Interaction*. 2012, p. 1 - 8 8 p.

Learning a physical skill via a computer: A case study exploring Australian Sign Language

Ellis, K., Ray, N. & Howard, C., 2011, *Proceedings of the 23rd Australian Computer-Human Interaction Conference*. Paris, C., Colineau, N., Farrell, V., Farrell, G. & Huang, W. (eds.). New York NY USA: Association for Computing Machinery (ACM), p. 98 - 103 6 p.

Playing the game - Effective gender role analysis techniques for computer games

Martin, D. & Ellis, K., 2011, *Proceedings of the 23rd Australian Computer-Human Interaction Conference*. Paris, C., Colineau, N., Farrell, V., Farrell, G. & Huang, W. (eds.). New York NY USA: Association for Computing Machinery (ACM), p. 185 - 193 9 p.

Ethical concerns in usability research involving children

Ellis, K. A., Quigley, M. & Power, M. W., 2010, *Breakthrough Discoveries in Information Technology Research: Advancing Trends*. Khosrow-Pour, M. (ed.). Hershey PA USA: Information Science Publishing, p. 151 - 159 9 p.

Multimedia for primary school children learning sign language

Ellis, K. A., 2009, *Proceedings of the 21st Annual Conference of the Australian Computer-Human Interaction Special Interest Group OZCHI 2009*. Kjeldskov, J., Paay, J. & Viller, S. (eds.). Melbourne Vic Australia: CHISIG, p. 97 - 104 8 p.

Auditory attention control for human-computer interaction

Poguntke, M. & Ellis, K. A., 2008, *Proceedings of the 2008 International Conference on Human System Interaction*. Hippe, Z. S. & Malinowski, A. (eds.). Los Alamitos CA USA: IEEE, Institute of Electrical and Electronics Engineers, p. 231 - 236 6 p.

Experiences in ethical usability testing with children

Ellis, K. A., Quigley, M. & Power, M. W., 2008, In: *Journal of Information Technology Research*. 1, 3, p. 1 - 13 13 p.

Ethical usability testing with children

Ellis, K. & Quigley, M., 2007, *Encyclopedia of Information Ethics and Security*. IGI Global, p. 235-240 6 p.

Multimedia to assist kindergarten children to learn Australian sign language

Ellis, K. A., 2007, In: *Australian Research in Early Childhood Education*. 14, 2, p. 11 - 22 12 p.

The digital playground: Kindergarten children learning sign language through multimedia

Ellis, K. A. & Blashki, K. M., 2007, In: *AACE Journal*. 15, 3, p. 225 - 253 29 p.

Do game-based study tools enhance the learning of complex theoretical subject matter

Howard, C. A. E., Morgan, M. & Ellis, K. A., 2006, *Proceedings of The Twelfth Australasian World Wide Web Conference*. Ellis, A. & Treloar, A. (eds.). Lismore NSW Australia: Southern Cross University, p. 15 - 22 8 p.

Games and learning ... does this compute?

Howard, C. A. E., Morgan, M. & Ellis, K. A., 2006, *Proceedings of Ed-Media 2006 World Conference on Educational Multimedia, Hypermedia & Telecommunications*. Pearson, E. & Bohman, P. (eds.). Norfolk USA: Association for the Advancement of Computing in Education (AACE), p. 1217 - 1224 8 p.

Methodologies for developing multimedia systems: a survey

Szota, M. A. & Ellis, K. A., 2006, *Emerging Trends and Challenges in Information Technology Management*. Khosrow-Pour, M. (ed.). Hershey USA: IDEA Publishing, p. 1 - 4 4 p.

Tools for inclusive play: developing "Auslan for Kinder"

Ellis, K. A., 2005, *Proceedings of the Third International Conference on Information Technology and Applications*. He, X., Hintz, T., Piccardi, M., Wu, Q., Huang, M. & Tien, D. (eds.). Los Alamitos USA: IEEE, Institute of Electrical and Electronics Engineers, p. 147 - 152 6 p.

Children, Australian sign language and the Web; the possibilities

Ellis, K. A. & Blashki, K. M., 2004, *AusWeb X: The Challenge of Integration as the Web Moves into its Second Decade: Proceedings of The Tenth Australian World Wide Web Conference*. Treloar, A. & Ellis, A. (eds.). Lismore NSW Australia: Southern Cross University, p. 281 - 287 7 p.

Children, sign language and multimedia: an ideal match

Ellis, K. A., Blashki, K. M. & Quigley, M., 2004, *Innovations Through Information Technology: Proceedings of the 2004 Information Resources Management Association International Conference*. Khosrow-Pour, M. (ed.). Hershey USA: IDEA Publishing, p. 391 - 393 3 p.

Mastering the metaphor: empowering the young child for independent computer use

Ellis, K. A. & Blashki, K. M., 2004, In: *AACE Journal*. 12, 4, p. 4438 - 4445 8 p.

Toddler techies: a study of young children's interaction with computers

Ellis, K. A. & Blashki, K. M., 2004, In: *Information Technology in Childhood Education Annual*. 2004, p. 77 - 96 20 p.

Multimedia metaphors for young children: TVM a case study

Ellis, K. A. & Blashki, K. M., 2003, *Proceedings of the 2003 Information Resources Management Association International Conference (Information Technology and Organizations: Trends, Issues, Challenges and Solutions)*. Khosrow-Pour, M. (ed.). Hershey PA USA: IDEA Publishing, Vol. 1. p. 127 - 129 3 p.

Grants

Making eMaking Accessible for People with Intellectual Disabilities

Ellis, K., Kidman, G., Ananthanarayan, S., Tan, H. & Callaway, L.
1/02/23 → 31/01/26

MakerVan: A mobile makerspace delivering STEM engagement to disability communities across Victoria

Ellis, K. & Ananthanarayan, S.
1/11/22 → 26/05/23

Veski Inspiring Women Career Recovery Grant

Ellis, K.
15/11/21 → 15/11/22

Collaborative clinical, technical and user-interface research to accelerate translation of an online visual test to diagnose bipolar disorder

Miller, S., Law, P. & Ellis, K.
Department of Health (DH) (Victoria)
30/04/18 → 31/10/22

Inclusive Gallery Experiences: Creating an Accessible Bendigo Art Gallery for Blind and Low Vision Visitors

Butler, M., Marriott, K., Ellis, K., Holloway, L. & Dziekan, V.
Trustee for Helen Macpherson Smith Trust
1/11/19 → 30/04/22

COVID-19: Pedagogical Opportunities for students; Online Inquiry-Based-Learning

Kidman, G., Ellis, K., Kewalramani, S. & Tan, H.
1/10/20 → 31/12/21

Engaged Exchanges: Teaching and integrating inquiry learning in online environments

Kidman, G., Tan, H., Kewalramani, S., Ellis, K., Rady, D., Kinnaird, N., Daujat, S. & Bourke, S.
27/10/20 → 10/12/20

Making For All: reaching people with disabilities

Ellis, K., Crouch, L. & Senaratne, H.
1/04/20 → 22/09/20

Online self-management of cancer-related fatigue: a multimodal approach

Avery, S., Ellis, K., Hassed, C., Klarica, D., Hodgson, A., Walker, P. A. & Wright, T.
1/10/16 → 1/10/19

Maker workshops for all: including people with disabilities

Ellis, K., Morgan, M. & Crouch, L.
5/04/19 → 22/09/19

Internet-based management of rotator cuff tendinopathy with remote physiotherapist led support: a pilot and feasibility randomised controlled trial

Perraton, L., Malliaras, P., Maloney, S. & Ellis, K.
Monash University – Internal School Contribution
14/01/19 → 22/07/19

Enhancing learning capacity and academic outcomes using novel game technology in primary school children with developmental disabilities

Cornish, K., Ellis, K., Gray, K., Harcourt, J., Hocking, D. & Mcintosh, K.
Australian Research Council (ARC), Grey Innovation Pty Ltd, Torus Games Pty Ltd
1/01/12 → 31/12/17

Auslan Anywhere: Portable Sign Language Learning

Ellis, K.
Andrews Foundation
3/12/13 → 31/12/14

Auslan Touch

Ellis, K.
Telematics Trust
1/12/13 → 31/12/14

Acquiring Physical Skills: Exploiting Games Technology to Teach Sign Language

Ellis, K., Fisher, J. L., Rinehart, N., Willoughby, L. & Ray, N.
Australian Research Council (ARC), Victorian Deaf Society, Deaf Children Melbourne Australia (DCMA)
1/07/11 → 15/12/14

6 iPad Wi-Fi = 4G 64GB with covers

Ellis, K.
Collier Charitable Fund
1/01/13 → 30/09/13

25x Nintendo DS Lite consoles at \$178 each AND 25x R4s consoles with 4 Gb MicroSD cards at \$61 each.

Ellis, K.
Collier Charitable Fund
1/01/10 → 31/12/10

Tools for inclusive play: teaching Auslan sign language to children using Multimedia

Ellis, K.
CASS Foundation
1/06/04 → 1/06/05