

## REFERENCES

- [1] S. Murnani, "A robust object selection technique in gaze gesture application using exponential moving average and hidden markov model," *Master's thesis*, 2020.
- [2] "Understanding lstm networks." [Online]. Available: <http://colah.github.io/posts/2015-08-Understanding-LSTMs/>
- [3] "Insurance Quotes germs at the airport," <https://www.insurancequotes.com/health/germs-at-the-airport>, accessed: 2021-03-29.
- [4] "WHO coronavirus disease (covid-19) advice for the public," <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public>, accessed: 2021-07-5.
- [5] H. Lei, Y. Li, S. Xiao, X. Yang, C. Lin, S. L. Norris, D. Wei, Z. Hu, and S. Ji, "Logistic growth of a surface contamination network and its role in disease spread," *Scientific reports*, vol. 7, no. 1, pp. 1–10, 2017.
- [6] J. A. Otter, S. Yezli, J. A. Salkeld, and G. L. French, "Evidence that contaminated surfaces contribute to the transmission of hospital pathogens and an overview of strategies to address contaminated surfaces in hospital settings," *American journal of infection control*, vol. 41, no. 5, pp. S6–S11, 2013.
- [7] M. Z. Iqbal and A. Campbell, "The emerging need for touchless interaction technologies," *Interactions*, vol. 27, no. 4, pp. 51–52, 2020.
- [8] "Intel the need for enabling touchless technologies," <https://www.intel.com/content/dam/www/public/us/en/documents/pdf/the-need-for-enabling-touchless-technologies-whitepaper.pdf>, accessed: 2021-03-30.
- [9] M. Z. Iqbal and A. G. Campbell, "From luxury to necessity: Progress of touchless interaction technology," *Technology in Society*, vol. 67, p. 101796, 2021.
- [10] M. Z. Iqbal and A. G. Campbell, "Touchless hand interaction and machine learning agents to support kinesthetic learning in augmented reality," in *Proceedings of the 52nd ACM Technical Symposium on Computer Science Education*, 2021, pp. 1322–1322.
- [11] J. Xie, B. Zhang, S. A. Chepinskiy, and A. A. Zhilenkov, "A dynamic head gesture recognition method for real-time human-computer interaction," in *International Conference on Intelligent Robotics and Applications*. Springer, 2021, pp. 235–245.
- [12] J. Wang and G. Du, "Covid-19 may transmit through aerosol." *Irish journal of medical science*, 2020.

- [13] Z.-y. Ge, L.-m. Yang, J.-j. Xia, X.-h. Fu, and Y.-z. Zhang, "Possible aerosol transmission of covid-19 and special precautions in dentistry," *Journal of Zhejiang University-SCIENCE B*, vol. 21, no. 5, pp. 361–368, 2020.
- [14] H. Brignull and Y. Rogers, "Enticing people to interact with large public displays in public spaces." in *Interact*, vol. 3, 2003, pp. 17–24.
- [15] S. Stellmach and R. Dachsel, "Still looking: Investigating seamless gaze-supported selection, positioning, and manipulation of distant targets," in *Proceedings of the sigchi conference on human factors in computing systems*, 2013, pp. 285–294.
- [16] "Tobii how eye tracking can prevent the spread of germs," <https://blog.tobii.com/how-eye-tracking-can-prevent-the-spread-of-germs>, accessed: 2021-03-30.
- [17] A.-T. Karlberg, M. A. Bergström, A. Börje, K. Luthman, and J. L. G. Nilsson, "Allergic contact dermatitis—formation, structural requirements, and reactivity of skin sensitizers," *Chemical research in toxicology*, vol. 21, no. 1, pp. 53–69, 2008.
- [18] C. Ware and H. H. Mikaelian, "An evaluation of an eye tracker as a device for computer input2," *Acm sigchi bulletin*, vol. 18, no. 4, pp. 183–188, 1987.
- [19] "Tobii Pro what is eye tracking?" <https://www.tobiipro.com/blog/what-is-eye-tracking>, accessed: 2021-03-30.
- [20] K. Holmqvist, M. Nyström, R. Andersson, R. Dewhurst, H. Jarodzka, and J. Van de Weijer, *Eye tracking: A comprehensive guide to methods and measures*. OUP Oxford, 2011.
- [21] M. Vidal, A. Bulling, and H. Gellersen, "Pursuits: spontaneous interaction with displays based on smooth pursuit eye movement and moving targets," in *Proceedings of the 2013 ACM international joint conference on Pervasive and ubiquitous computing*. ACM, 2013, pp. 439–448.
- [22] A. Hyrskykari, H. Istance, and S. Vickers, "Gaze gestures or dwell-based interaction?" in *Proceedings of the Symposium on Eye Tracking Research and Applications*. ACM, 2012, pp. 229–232.
- [23] P. Majaranta and K. J. Räihä, "Twenty years of eye typing: systems and design issues," in *ETRA*, vol. 2, 2002, pp. 15–22.
- [24] D. D. Salvucci and J. R. Anderson, "Intelligent gaze-added interfaces," in *Proceedings of the SIGCHI conference on Human Factors in Computing Systems*. ACM, 2000, pp. 273–280.

- [25] H. Drewes and A. Schmidt, “Interacting with the computer using gaze gestures,” in *IFIP Conference on Human-Computer Interaction*. Springer, 2007, pp. 475–488.
- [26] S. Stellmach, S. Stober, A. Nürnberger, and R. Dachsel, “Designing gaze-supported multimodal interactions for the exploration of large image collections,” in *Proceedings of the 1st conference on novel gaze-controlled applications*. ACM, 2011, p. 1.
- [27] M. L. Dybdal, J. S. Agustin, and J. P. Hansen, “Gaze input for mobile devices by dwell and gestures,” in *Proceedings of the Symposium on Eye Tracking Research and Applications*. ACM, 2012, pp. 225–228.
- [28] J. Kangas, D. Akkil, J. Rantala, P. Isokoski, P. Majaranta, and R. Raisamo, “Gaze gestures and haptic feedback in mobile devices,” in *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*. ACM, 2014, pp. 435–438.
- [29] M. Alfaro E., S. Wibirama, and I. Ardiyanto, “Accuracy improvement of object selection in gaze gesture application using deep learning,” in *2020 12th International Conference on Information Technology and Electrical Engineering (ICITEE)*, 2020, pp. 307–311.
- [30] M. Vidal, K. Pfeuffer, A. Bulling, and H. W. Gellersen, “Pursuits: eye-based interaction with moving targets,” in *CHI’13 Extended Abstracts on Human Factors in Computing Systems*. ACM, 2013, pp. 3147–3150.
- [31] M. Vidal, A. Bulling, and H. Gellersen, “Pursuits: spontaneous eye-based interaction for dynamic interfaces,” *GetMobile: Mobile Computing and Communications*, vol. 18, no. 4, pp. 8–10, 2015.
- [32] D. H. Koh, S. Munikrishne Gowda, and O. V. Komogortsev, “Real time eye movement identification protocol,” in *CHI’10 Extended Abstracts on Human Factors in Computing Systems*. ACM, 2010, pp. 3499–3504.
- [33] Herlina, S. Wibirama, and I. Ardiyanto, “Similarity measures of object selection in interactive applications based on smooth pursuit eye movements,” in *2018 International Conference on Information and Communications Technology (ICOIACT)*. IEEE, 2018, pp. 639–644.
- [34] R. Zemblys, D. C. Niehorster, O. V. Komogortsev, and K. Holmqvist, “Using machine learning to detect events in eye-tracking data,” *Behavior Research Methods*, vol. 50, pp. 160–181, 2018.
- [35] R. Zemblys, N. Diederick, and K. Holmqvist, “End-to-end eye-movement event detection using deep neural networks,” in *Journal of Eye Movement Research: vol. 10, iss. 6: Abstracts of the 19th European Conference on Eye Movements, August 20-24, 2017, Wuppertal, Germany*, vol. 10, no. 6. International Group for Eye Movement Research, 2017.

- [36] R. Zembly, D. C. Niehorster, and K. Holmqvist, “gazenet: End-to-end eye-movement event detection with deep neural networks.” *Behavior Research Methods*, vol. 51], pages=840-864, 2019.
- [37] J. Goltz, M. Grossberg, and R. Etemadpour, “Exploring simple neural network architectures for eye movement classification,” in *Proceedings of the 11th ACM Symposium on Eye Tracking Research & Applications*, 2019, pp. 1–5.
- [38] J. Brownlee, “What is deep learning?” Dec 2019. [Online]. Available: <https://machinelearningmastery.com/what-is-deep-learning/>
- [39] S. Hochreiter and J. Schmidhuber, “Long short-term memory,” *Neural computation*, vol. 9, pp. 1735–80, 12 1997.
- [40] Y. Bengio, P. Simard, and P. Frasconi, “Learning long-term dependencies with gradient descent is difficult,” *IEEE transactions on neural networks*, vol. 5, no. 2, pp. 157–166, 1994.
- [41] F. Karim, S. Majumdar, H. Darabi, and S. Chen, “Lstm fully convolutional networks for time series classification,” *IEEE access*, vol. 6, pp. 1662–1669, 2017.
- [42] Suyanto, *Machine Learning: Tingkat Dasar dan Lanjut*. Informatika, 2018.
- [43] I. Priyadarshini and C. Cotton, “A novel lstm–cnn–grid search-based deep neural network for sentiment analysis,” *The Journal of Supercomputing*, vol. 77, no. 12, pp. 13 911–13 932, 2021.
- [44] S. Wibirama, S. Murnani, and N. A. Setiawan, “Spontaneous gaze gesture interaction in the presence of noises and various types of eye movements,” in *ACM Symposium on Eye Tracking Research and Applications*, 2020, pp. 1–5.
- [45] M. Khamis, F. Alt, and A. Bulling, “A field study on spontaneous gaze-based interaction with a public display using pursuits,” in *Adjunct Proceedings of the 2015 ACM International Joint Conference on Pervasive and Ubiquitous Computing and Proceedings of the 2015 ACM International Symposium on Wearable Computers*. ACM, 2015, pp. 863–872.
- [46] M. Khamis, O. Saltuk, A. Hang, K. Stolz, A. Bulling, and F. Alt, “Textpursuits: using text for pursuits-based interaction and calibration on public displays,” in *Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing*. ACM, 2016, pp. 274–285.
- [47] J. Kangas, J. Rantala, D. Akkil, P. Isokoski, P. Majaranta, and R. Raisamo, “Vibrotactile stimulation of the head enables faster gaze gestures,” *International Journal of Human-Computer Studies*, vol. 98, pp. 62–71, 2017.

- [48] Y. Zhang, A. Bulling, and H. Gellersen, “Sideways: a gaze interface for spontaneous interaction with situated displays,” in *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*. ACM, 2013, pp. 851–860.
- [49] D. W. Hansen and Q. Ji, “In the eye of the beholder: A survey of models for eyes and gaze,” *IEEE transactions on pattern analysis and machine intelligence*, vol. 32, no. 3, pp. 478–500, 2009.
- [50] C. H. Morimoto and M. R. Mimica, “Eye gaze tracking techniques for interactive applications,” *Computer vision and image understanding*, vol. 98, no. 1, pp. 4–24, 2005.
- [51] “How do tobii eye trackers work?” <https://www.tobii.com/learn-and-support/learn/eye-tracking-essentials/how-do-tobii-eye-trackers-work/>, accessed: 2019-09-21.
- [52] R. Johnson, K. O’Hara, A. Sellen, C. Cousins, and A. Criminisi, “Exploring the potential for touchless interaction in image-guided interventional radiology,” in *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, 2011, pp. 3323–3332.
- [53] D. Michelis and J. Müller, “The audience funnel: Observations of gesture based interaction with multiple large displays in a city center,” *Intl. Journal of Human–Computer Interaction*, vol. 27, no. 6, pp. 562–579, 2011.
- [54] J. Brownlee, “How to develop rnn models for human activity recognition time series classification,” Mar 2020. [Online]. Available: <https://machinelearningmastery.com/how-to-develop-rnn-models-for-human-activity-recognition-time-series-classification/>
- [55] F. Pedregosa, G. Varoquaux, A. Gramfort, V. Michel, B. Thirion, O. Grisel, M. Blondel, P. Prettenhofer, R. Weiss, V. Dubourg, J. Vanderplas, A. Passos, D. Cournapeau, M. Brucher, M. Perrot, and E. Duchesnay, “Scikit-learn: Machine learning in Python,” *Journal of Machine Learning Research*, vol. 12, pp. 2825–2830, 2011.
- [56] P. Liashchynskyi and P. Liashchynskyi, “Grid search, random search, genetic algorithm: A big comparison for nas,” *arXiv preprint arXiv:1912.06059*, 2019.
- [57] J. Lazar, J. H. Feng, and H. Hochheiser, *Research methods in human-computer interaction*. Morgan Kaufmann, 2017.
- [58] M. Feurer and F. Hutter, “Hyperparameter optimization,” in *Automated machine learning*. Springer, Cham, 2019, pp. 3–33.
- [59] A. L. Rosenbaum and A. P. Santiago, *Clinical strabismus management: principles and surgical techniques*. David Hunter, 1999.

- [60] Z. Chen, H. Fu, W.-L. Lo, and Z. Chi, “Strabismus recognition using eye-tracking data and convolutional neural networks,” *Journal of healthcare engineering*, vol. 2018, 2018.
- [61] Y. Liu, C. Zhang, C. Lee, B.-S. Lee, and A. Q. Chen, “Gazetry: Swipe text typing using gaze,” in *Proceedings of the annual meeting of the Australian special interest group for computer human interaction*, 2015, pp. 192–196.
- [62] A. Kurauchi, W. Feng, A. Joshi, C. Morimoto, and M. Betke, “Eyeswipe: Dwell-free text entry using gaze paths,” in *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems*, 2016, pp. 1952–1956.
- [63] A. Hard, K. Rao, R. Mathews, S. Ramaswamy, F. Beaufays, S. Augenstein, H. Eichner, C. Kiddon, and D. Ramage, “Federated learning for mobile keyboard prediction,” *arXiv preprint arXiv:1811.03604*, 2018.