REFERENCES

[1] Merriam-Webster.com Dictionary, "biometrics," [Online]. Available: https://www.merriam-webster.com/dictionary/biometrics. [Accessed 5 September 2020].

[2] Wikipedia contributors, "Countries applying biometrics," Wikipedia, The Free Encyclopedia., 17 July 2020. [Online]. Available: https://en.wikipedia.org/w/index.php?title=Countries_applying_biometrics&oldid=968187776. [Accessed 5 September 2020].

[3] B. T. F. MAILONLINE, "China will have 'one street camera for every TWO PEOPLE by next year' as the country tightens its grip on state surveillance," DailyMail.co.uk, 21 August 2019. [Online]. Available: https://www.dailymail.co.uk/news/article-7379255/China-one-CCTV-camera-TWO-PEOPLE-year.html. [Accessed 5 September 2020].

[4] A. Cuthbertson, "INDIAN POLICE TRACE 3,000 MISSING CHILDREN IN JUST FOUR DAYS USING FACIAL RECOGNITION TECHNOLOGY," independent.co.uk, 24 April 2018. [Online]. Available: https://www.independent.co.uk/life-style/gadgets-and-tech/news/india-police-missing-children-facial-recognition-tech-trace-find-reunite-a8320406.html. [Accessed 5 September 2020].

[5] D. THAKKAR, "Top Five Biometrics (Face, Fingerprint, Iris, Palm and Voice) Modalities Comparison," Bayometric (Pvt.) Ltd., [Online]. Available: https://www.bayometric.com/biometrics-face-finger-iris-palm-voice/. [Accessed 5 September 2020].

[6] K. Ko and W. J. Salamon, "NIST Biometric Image Software (NBIS)," 10 February 2010. [Online]. Available: https://www.nist.gov/services-resources/software/nist-biometric-image-software-nbis. [Accessed 19 September 2020].

[7] A. K. I. S. and G. E. H. , "ImageNet classification with deep convolutional neural networks.," *Advances in Neural Information Processing Systems (NIPS),* no. 25, pp. 1106-1114, 2012.

[8]   J. R. S. D. R. G. and A. F. , "You Only Look Once: Unified, Real-Time Object Detection," *2016 IEEE Conference on Computer Vision and Pattern Recognition (CVPR),* pp. 779-788, 2016.

[9]   R. O. F. P. B. T. N. N. H. J. W. W. M. and F. A. F. , "U-Net: Convolutional Networks for Biomedical Image Segmentation," in *Medical Image Computing and Computer-Assisted Intervention -- MICCAI 2015*, Springer International Publishing, 2015, pp. 234-241.

[10] F.-F. L. R. K. and D. X. , "Convolutional Neural Networks for Visual Recognition," Stanford University, United States, 2020. [Online]. Available: https://cs231n.github.io/convolutional-networks/. [Accessed 19 September 2020].

[11] J. B. J. W. B. L.́. G. I. L. Y. M. C. S.̈. E.-. u. a. S. R. Bromley, "Signature verification using a siamese time delay neural network," *International Journal of Pattern Recognition and Artificial Intelligence,* p. 669–688, 1993.

[12] University of Wisconsin at La Crosse, "Transfer of Learning," University of Wisconsin at La Crosse, 2015. [Online]. Available: https://sites.google.com/a/uwlax.edu/teaching-improvement-guide/improvement-strategies/student-learning/i-transfer-of-learning. [Accessed 3 June 2021].

[13] K. S. and S. S. , "Biometric Recognition for Pet Animal," *Journal of Software Engineering and Applications,* vol. 7, no. 4, pp. 470-482, 2014.

[14] M. G. Malloy, "A Policy for Fluffy: Pet insurance is a small industry—but it's poised for big growth in the U.S.," American Academy of Actuaries, 2020. [Online]. Available: http://contingencies.org/a-policy-for-fluffy-pet-insurance-is-a-small-industry-but-its-poised-for-big-growth-in-the-u-s-%E2%80%83/. [Accessed 19 September 2020].

[15] A. Gandhi, "Data Augmentation | How to use Deep Learning when you have Limited Data—Part 2," 2018. [Online]. Available: https://nanonets.com/blog/data-augmentation-how-to-use-deep-learning-when-you-have-limited-data-part-2/. [Accessed 19 September 2020].

[16] Aquarium Software, "400% rise in pet insurance fraud highlights need for new approach," youTalk-insurance, [Online]. Available: https://youtalk-insurance.com/broker-news/400-rise-in-pet-insurance-fraud-highlights-need-for-new-approach. [Accessed 19 September 2020].

[17] R. Das, E. P. E. M. and P. C. , "Convolutional Neural Network for Finger-Vein-Based Biometric Identification," *IEEE Transactions on Information Forensics and Security ,* vol. 14, no. 2, pp. 360-373, 2019.

[18] Recogtech, "How does vein pattern recognition work?," [Online]. Available: https://www.recogtech.com/en/knowledge-base/vein-pattern-recognition. [Accessed 19 September 2020].

[19] "Fingerprint - Antiquity and the medieval period," Wikipedia, [Online]. Available: https://en.wikipedia.org/wiki/Fingerprint#Antiquity_and_the_medieval_period. [Accessed 19 September 2020].

[20] W. contributors, "Vein matching," Wikipedia, The Free Encyclopedia., 29 June 2020. [Online]. Available: https://en.wikipedia.org/wiki/Vein_matching. [Accessed 19 September 2020].

[21] Biowatch, "Biowatch History," Biowatch, [Online]. Available: https://biowatchid.com/about/. [Accessed 19 September 2020].

[22] D. R. P. E. M. E. and C. P. , "Convolutional Neural Network for Finger-Vein-Based Biometric Identification," *IEEE Transactions on Information Forensics and Security,* vol. PP, pp. 1-1, 2018.

[23] C. S. H. A. and E. R. , "Palm Vein Biometric Authentication Using Convolutional Neural Networks," in *Proceedings of the 8th International Conference on Sciences of Electronics, Technologies of Information and Telecommunications (SETIT'18)*, 2020, pp. 352-363.

[24] B. Lorenzo Crumbie MBBS, "Outer ear," Kenhub, 31 August 2020. [Online]. Available: https://www.kenhub.com/en/library/anatomy/outer-ear. [Accessed 19 September 2020].

[25] W. contributors, "Auricle (anatomy)," Wikipedia, The Free Encyclopedia., 18 September 2020. [Online]. Available: https://en.wikipedia.org/w/index.php?title=Auricle_(anatomy)&oldid=979126937. [Accessed 19 September 2020].

[26] M. Ketchell, "Pet theft is on the rise, with more than 60 dogs stolen in the UK every week," The Conversation, 15 February 2018. [Online]. Available: https://theconversation.com/pet-theft-is-on-the-rise-with-more-than-60-dogs-stolen-in-the-uk-every-week-91418. [Accessed 19 September 2020].

[27] Pet Theft Awareness (NGO), "The Cat Theft Report 2021," Pet Theft Awareness (NGO), 13 March 2021. [Online]. Available: https://pettheftawareness.blogspot.com/2021/03/cat-theft-report-2021.html. [Accessed 23 June 2021].

[28] North American Pet Health Insurance Association (NAPHIA) , "Total Pets Insured," North American Pet Health Insurance Association (NAPHIA) , [Online]. Available: https://naphia.org/about-the-industry/section-2-total-pets-insured/. [Accessed 19 September 2020].

[29] "Pet Insurance – A Growth Opportunity," CRIF, September 2016. [Online]. Available: https://www.crif.com/news-and-events/press-releases/2016/september/pet-insurance-a-growth-opportunity/. [Accessed 19 September 2020].

[30] J. MCGRATH, "How Pet Microchipping Works," howstuffwork, [Online]. Available: https://science.howstuffworks.com/innovation/everyday-innovations/pet-microchip5.htm. [Accessed 19 September 2020].

[31] L. E. E. B. P. S. B. S. W. H. E. H. K. C. D. M. M. R. E. M. T. F. H. and S. G. L. , "Tumors in long-term rat studies associated with microchip animal identification devices," *Experimental and Toxicologic Pathology,* vol. 52, no. 6, pp. 483 - 491, 2001.

[32] U. G. B. G. C. B. B. F. B. K. M. and S. W. , "Assessment of retinal recognition technology as a biometric method for sheep identification," *Computers and Electronics in Agriculture,* vol. 60, no. 2, pp. 156 - 166, 2008.

[33] W. Petersen, "The Identification of the Bovine by Means of Nose-Prints1," *Journal of Dairy Science,* vol. 5, no. 3, pp. 249 - 258, 1922.

[34] B. J. B. J. W. B. L. G. I. L. Y. M. C. S. E. and S. R. , "SIGNATURE VERIFICATION USING A "SIAMESE" TIME DELAY NEURAL NETWORK," *International Journal of Pattern Recognition and Artificial Intelligence,* vol. 07, no. 04, pp. 669-688, 1993.

[35] Stanford Vision Lab, Stanford University, Princeton University, "IMAGENET," Stanford University, Princeton University, 2020. [Online]. Available: https://www.image-net.org/index.php. [Accessed 2021].

[36] Stanford Vision Lab, Stanford University, Princeton University, "ImageNet About," 2020. [Online]. Available: https://image-net.org/about.php. [Accessed 6 June 2021].

[37] M. S. S. A. S. and B. A. R. , "Fusion of Band Limited Phase Only Correlation and Width Centroid Contour Distance for finger based biometrics," *Expert Systems with Applications,* vol. 41, no. 7, pp. 3367 - 3382, 2014.

[38] D. B. A. Rosdi, "FV-USM," 2021. [Online]. Available: http://drfendi.com/fv_usm_database/. [Accessed 6 June 2021].

[39] S. T. S. Z. W. K. Q. W. and F. D. , "Finger vein verification using a Siamese CNN," *The Institution of Engineering and Technology,* vol. 8, no. 5, p. 306 – 315, 2019.

[40] D. P. K. a. J. Ba, "Adam: A Method for Stochastic Optimization," in *3rd International Conference for Learning Representations,* San Diego, 2017.

[41] "Tensor Board," [Online]. Available: https://www.tensorflow.org/tensorboard. [Accessed 04 June 2021].

[42] Crum & Forster, Embrace Pet Insurance, Figo Pet Insurance, Healthy Paws Pet Insurance & Foundation, Nationwide Pet Insurance, PetFirst Pet Insurance, PetHealth Inc., Petline Insurance, PetPartners, Petplan Pet insurance, Pets Best Insurance, Pets Plus Us, "Pet Insurance in North America," North American Pet Health Insurance Association, 2020. [Online]. Available: https://naphia.org/about-the-industry/. [Accessed 19 September 2020].

[43] V. M. T. P. E. S. L. and M. S. b. , "Cross-Database Evaluation With an Open Finger Vein Sensor," in *IEEE Workshop on Biometric Measurements and Systems for Security and Medical Applications (BioMS)*, Rome, Italy, 2014.

[44] K. A. and Z. Y. , "Human Identification Using Finger Images," *IEEE transactions on image processing : a publication of the IEEE Signal Processing Society,* vol. 21, pp. 2228-2244, 2011.

[45] T. P. and M. S. , "On the Vulnerability of Palm Vein Recognition to Spoofing Attacks," in *The 8th IAPR International Conference on Biometrics (ICB)*, Pucket, Thailand, 2015.

[46] J. S. M. A. M. N. M. V. and B. v. G. , "Ridge based vessel segmentation in color images of the retina," *IEEE Transactions on Medical Imaging,* vol. 23, pp. 501-509, 2004.

[47] EyePACS, "Data Analysis," EyePACS, [Online]. Available: https://www.eyepacs.com/data-analysis. [Accessed 19 September 2020].

[48] Technical Committee ISO/TC 172, Optics and photonics., "ISO 20473:2007," ISO, 2007. [Online]. Available: https://www.iso.org/standard/39482.html. [Accessed 19 September 2020].

[49] N. Otsu, "A Threshold Selection Method from Gray-Level Histograms," *IEEE Transactions on Systems, Man, and Cybernetics,* vol. 9, no. 1, pp. 62-66, 1979.