References

[1] Rabah A Al-Zaidy, Sagnik Ray Choudhury, and C Lee Giles. Automatic summary generation for scientific data charts. In *Workshops at the 30th AAAI Conference*, 2016.

[2] Rabah A Al-Zaidy and C Lee Giles. A machine learning approach for semantic structuring of scientific charts in scholarly documents. In *29th IAAI Conference*, 2017.

[3] Jihen Amara, Pawandeep Kaur, Michael Owonibi, and Bassem Bouaziz. Convolutional neural network based chart image classification. 2017.

[4] Abhijit Balaji, Thuvaarakkesh Ramanathan, and Venkateshwarlu Sonathi. Chart-text: A fully automated chart image descriptor. *arXiv preprint arXiv:1812.10636*, 2018.

[5] Ritwick Chaudhry, Sumit Shekhar, Utkarsh Gupta, Pranav Maneriker, Prann Bansal, and Ajay Joshi. Leaf-qa: Locate, encode & attend for figure question answering. *arXiv preprint arXiv:1907.12861*, 2019.

[6] Jinho Choi, Sanghun Jung, Deok Gun Park, Jaegul Choo, and Niklas Elmqvist. Visualizing for the non-visual: Enabling the visually impaired to use visualization. In *Computer Graphics Forum*, volume 38, pages 249–260. Wiley Online Library, 2019.

[7] Kaiwen Duan, Song Bai, Lingxi Xie, Honggang Qi, Qingming Huang, and Qi Tian. Centernet: Keypoint triplets for object detection. *arXiv preprint arXiv:1904.08189*, 2019.

[8] Jinglun Gao, Zhou Yin, and K. E. Barner. View: Visual information extraction widget for improving chart images accessibility. In *IEEE International Conference on Image Processing*, 2013.

[9] Kaiming He, Xiangyu Zhang, Shaoqing Ren, and Jian Sun. Deep residual learning for image recognition. In *Proceedings of the IEEE conference on Computer Vision and Pattern Recognition*, pages 770–778, 2016.

[10] Weihua Huang and Chew Lim Tan. A system for understanding imaged infographics and its applications. In *Proceedings of the 2007 ACM symposium on Document Engineering*, pages 9–18, 2007.

[11] Daekyoung Jung, Wonjae Kim, Hyunjoo Song, Jeong-in Hwang, Bongshin Lee, Bohyoung Kim, and Jinwook Seo. Chartsense: Interactive data extraction from chart images. In *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems*, pages 6706–6717. ACM, 2017.

[12] Kushal Kafle, Brian Price, Scott Cohen, and Christopher Kanan. Dvqa: Understanding data visualizations via question answering. In *The IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, June 2018.

[13] Kushal Kafle, Robik Shrestha, Brian Price, Scott Cohen, and Christopher Kanan. Answering questions about data visualizations using efficient bimodal fusion. *arXiv preprint arXiv:1908.01801*, 2019.

[14] Samira Ebrahimi Kahou, Vincent Michalski, Adam Atkinson, Ákos Kádár, Adam Trischler, and Yoshua Bengio. Figureqa: An annotated figure dataset for visual reasoning. *arXiv preprint arXiv:1710.07300*, 2017.

[15] Hei Law and Jia Deng. Cornernet: Detecting objects as paired keypoints. In *Proceedings of the European Conference on Computer Vision (ECCV)*, pages 734–750, 2018.

[16] Wenbo Li, Zhicheng Wang, Binyi Yin, Qixiang Peng, Yuming Du, Tianzi Xiao, Gang Yu, Hongtao Lu, Yichen Wei, and Jian Sun. Rethinking on multi-stage networks for human pose estimation. *arXiv preprint arXiv:1901.00148*, 2019.

[17] Xiaoyi Liu, Diego Klabjan, and Patrick NBless. Data extraction from charts via single deep neural network. *arXiv preprint arXiv:1906.11906*, 2019.

[18] Yan Liu, Xiaoqing Lu, Yeyang Qin, Zhi Tang, and Jianbo Xu. Review of chart recognition in document images. In *Visualization and Data Analysis 2013*, volume 8654, page 865410. International Society for Optics and Photonics, 2013.

[19] Alejandro Newell, Kaiyu Yang, and Jia Deng. Stacked hourglass networks for human pose estimation. In *European Conference on Computer Vision*, pages 483–499. Springer, 2016.

[20] Jorge Poco and Jeffrey Heer. Reverse-engineering visualizations: Recovering visual encodings from chart images. In *Computer Graphics Forum*, pages 353–363, 2017.

[21] Jorge Poco, Angela Mayhua, and Jeffrey Heer. Extracting and retargeting color mappings from bitmap images of visualizations. *IEEE Transaction on Visualization and Computer Graphics*, 24(1):637–646, 2018.

[22] Shaoqing Ren, Kaiming He, Ross Girshick, and Sun Jian. Faster r-cnn: Towards real-time object detection with region proposal networks. 2015.

[23] Manolis Savva, Nicholas Kong, Arti Chhajta, Fei Fei Li, Maneesh Agrawala, and Jeffrey Heer. Revision: Automated classification, analysis and redesign of chart images. In *ACM Symposium on User Interface Software & Technology*, 2011.

[24] Sudhindra Shukla and Ashok Samal. Recognition and quality assessment of data charts in mixed-mode documents. *International Journal of Document Analysis and Recognition (IJDAR)*, 11(3):111, 2008.

[25] Yue Wu, Tal Hassner, KangGeon Kim, Gerard Medioni, and Prem Natarajan. Facial landmark detection with tweaked convolutional neural networks. *IEEE transactions on Pattern Analysis and Machine Intelligence*, 40(12):3067–3074, 2017.