1 Datasets and Project Ideas

We have prepared a few datasets related to our course. For many of them we were also able to find research papers that analyze these datasets. You are welcome to develop your course projects based on these datasets or other datasets that you can find.

1.1 Search Engine, Retrieval and Online Advertisement

1.1.1 Yahoo! A1 Search Marketing Advertiser Bidding Dataset

Fairness: Nasr, Milad, and Michael Tschantz. Bidding Strategies with Gender Nondiscrimination: Constraints for Online Ad Auctions, FAT 2020

1.1.2 Search Engine Dataset

Fairness: Mustafaraj, Eni, Emma Lurie, and Claire Devine. The case for voter-centered audits of search engines during political elections, FAT 2020.

1.1.3 YouTube Spam Comments (Text Classification)

Link: http://www.dt.fee.unicamp.br/~tiago//youtubespamcollection,
Dataset Description: Alberto, Túlio C, Johannes V Lochter, and Tiago A Almeida. Tubespam: comment spam filtering on YouTube. In Machine Learning and Applications (Icmla), Ieee 14th International Conference on, 138–43. IEEE. 2015

1.2 NLP

1.2.1 Wikipedia Talk dataset

Dataset: Ellery Wulczyn, Nithum Thain, and Lucas Dixon. 2017. Ex machina: Personal attacks seen at scale. In Proceedings of the 26th International Conference on World Wide Web. International World Wide Web Conferences Steering Committee, 1391–1399
Fairness: Sweeney, Chris, and Maryam Najafian. Reducing sentiment polarity for demographic attributes in word embeddings using adversarial learning, FAT 2020

1.2.2 SemEval-2018 Task 1 Affect in Tweets

Dataset Description: Saif Mohammad, Felipe Bravo-Marquez, Mohammad Salameh, and Svetlana Kiritchenko. 2018. SemEval-2018 Task 1: Affect in Tweets. In Proceedings of The 12th International Workshop on Semantic Evaluation. Association for Computational Linguistics, 1–17.
Fairness: Sweeney, Chris, and Maryam Najafian. Reducing sentiment polarity for demographic attributes in word embeddings using adversarial learning, FAT 2020

1.2.3 Stanford Sentiment Treebank

Dataset Description: Richard Socher, Alex Perelygin, Jean Wu, Jason Chuang, Christopher D. Manning, Andrew Ng, and Christopher Potts. Recursive deep models for semantic compositionality over a sentiment treebank. In Proceedings of the 2013 Conference on Empirical Methods in Natural Language Processing, pages 1631–1642, Seattle, Washington, USA, October 2013. Association for Computational Linguistics.

1.2.4 Yelp challenge 2013

Link: yelp.com

1.2.5 Amazon Multi-Domain Sentiment dataset

Dataset Description: John Blitzer, Mark Dredze, and Fernando Pereira. Biographies, Bollywood, boom-boxes and blenders: Domain adaptation for sentiment classification. In Proceedings of the 45th Annual Meeting of the Association of Computational Linguistics, pages 440–447, Prague, Czech Republic, June 2007. Association for Computational Linguistics.
Accountability: Mena, José, Oriol Pujol, and Jordi Vitrià. Dirichlet uncertainty wrappers for actionable algorithm accuracy accountability and auditability, FAT 2020

1.3 Education

1.3.1 IIT-JEE entrance exam

Dataset Description: Harold Alderman and Elizabeth M. King. Gender differences in parental investment in education. Structural Change and Economic Dynamics, 9(4):453–468, 1998.
Fairness: Celis, L. Elisa, Anay Mehrotra, and Nisheeth K. Vishnoi. Interventions for ranking in the presence of implicit bias, FAT 2020

1.3.2 Semantic Scholar Open Research Corpus

Fairness: Celis, L. Elisa, Anay Mehrotra, and Nisheeth K. Vishnoi. Interventions for ranking in the presence of implicit bias, FAT 2020

1.4 Finance

1.4.1 German-Credit for assessing credit risk

Link: https://www.kaggle.com/janiobachmann/german-credit-analysis-a-risk-perspective

1.5 Finance

1.5.1 German-Credit for assessing credit risk

Fairness: Feldman, Michael. Computational Fairness: Preventing Machine-Learned Discrimination

1.6 Recommendation

1.6.1 MovieLens Dataset

Fairness: Dean, Sarah, Sarah Rich, and Benjamin Recht. Recommendations and User Agency: The Reachability of Collaboratively-Filtered Information, FAT 2020

1.7 Laws and Society

1.7.1 Adult-Income for Income Prediction

Link: https://archive.ics.uci.edu/ml/datasets/adult,
Dataset Description: Ronny Kohavi and Barry Becker. 1996. UCI Machine Learning Repository.
Fairness: Friedler, Sorelle A., Carlos Scheidegger, Suresh Venkatasubramanian, Sonam Choudhary, Evan P. Hamilton, and Derek Roth. A comparative study of fairness-enhancing interventions in machine learning, FAT 2019

1.7.2 Bike Rentals

Link: http://archive.ics.uci.edu/ml/datasets/Bike+Sharing+Dataset,

1.8 Healthcare

1.8.1 Risk Factors for Cervical Cancer

Link: https://archive.ics.uci.edu/ml/datasets/Cervical+cancer+%28Risk+Factors%29
Dataset Description: Fernandes, Kelwin, Jaime S Cardoso, and Jessica Fernandes. “Transfer learning with partial observability applied to cervical cancer screening.” In Iberian Conference on Pattern Recognition and Image Analysis, 243–50. Springer. (2017)