

Bibliography

- [1] A. Kumar, S. Mishra, S. S. Singh, K. Singh, and B. Biswas, “Link prediction in complex networks based on significance of higher-order path index (shopi),” *Physica A: Statistical Mechanics and its Applications*, p. 123790, 2019. [Online]. Available: <https://www.sciencedirect.com/science/article/abs/pii/S0378437119321107>
- [2] A. Kumar, S. S. Singh, K. Singh, and B. Biswas, “Link prediction techniques, applications, and performance: A survey,” *Physica A: Statistical Mechanics and its Applications*, vol. 553, p. 124289, 2020. [Online]. Available: <https://www.sciencedirect.com/science/article/abs/pii/S0378437120300856>
- [3] N. N. Daud, S. H. Ab Hamid, M. Saadoon, F. Sahran, and N. B. Anuar, “Applications of link prediction in social networks: A review,” *Journal of Network and Computer Applications*, vol. 166, p. 102716, 2020. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S1084804520301909>
- [4] T. Zhou, “Progresses and challenges in link prediction,” *iScience*, vol. 24, no. 11, p. 103217, 2021. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S2589004221011858>
- [5] E. C. Mutlu, T. Oghaz, A. Rajabi, and I. Garibay, “Review on learning and extracting graph features for link prediction,” *Machine Learning and Knowledge Extraction*, vol. 2, no. 4, pp. 672–704, 2020. [Online]. Available: <https://www.mdpi.com/2504-4990/2/4/36>

- [6] L. Hu, X. Wang, Y.-A. Huang, P. Hu, and Z.-H. You, “A survey on computational models for predicting protein–protein interactions,” *Briefings in Bioinformatics*, 03 2021. [Online]. Available: <https://academic.oup.com/bib/advance-article-abstract/doi/10.1093/bib/bbab036/6159365>
- [7] M. Wang, L. Qiu, and X. Wang, “A survey on knowledge graph embeddings for link prediction,” *Symmetry*, vol. 13, no. 3, 2021. [Online]. Available: <https://www.mdpi.com/2073-8994/13/3/485>
- [8] A. Rossi, D. Barbosa, D. Firmani, A. Matinata, and P. Merialdo, “Knowledge graph embedding for link prediction: A comparative analysis,” *ACM Trans. Knowl. Discov. Data*, vol. 15, no. 2, jan 2021. [Online]. Available: <https://dl.acm.org/doi/abs/10.1145/3424672>
- [9] H. Ding, I. Takigawa, H. Mamitsuka, and S. Zhu, “Similarity-based machine learning methods for predicting drug–target interactions: a brief review,” *Briefings in Bioinformatics*, vol. 15, no. 5, pp. 734–747, 08 2013. [Online]. Available: <https://academic.oup.com/bib/article/15/5/734/2422306>
- [10] S. Zhang, L. Yao, A. Sun, and Y. Tay, “Deep learning based recommender system: A survey and new perspectives,” *ACM Comput. Surv.*, vol. 52, no. 1, Feb. 2019. [Online]. Available: <https://dl.acm.org/doi/10.1145/3285029>
- [11] M. Kumar, S. Mishra, and B. Biswas, “Features fusion based link prediction in dynamic networks,” *Journal of Computational Science*, vol. 57, p. 101493, 2022. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S1877750321001587>
- [12] D. Liben-Nowell and J. Kleinberg, “The link prediction problem for social networks,” in *Proceedings of the Twelfth International Conference on Information and Knowledge Management*, ser. CIKM 2003. New York, NY, USA: ACM, 2003, pp. 556–559. [Online]. Available: <https://dl.acm.org/doi/10.1145/956863.956972>

- [13] M. A. Hasan and M. J. Zaki, *A Survey of Link Prediction in Social Networks*. Boston, MA: Springer US, 2011, pp. 243–275. [Online]. Available: https://link.springer.com/chapter/10.1007/978-1-4419-8462-3_9
- [14] A. Clauset, C. Moore, and M. E. J. Newman, “Hierarchical structure and the prediction of missing links in networks,” *Nature*, vol. 453, no. 7191, p. 98–101, May 2008. [Online]. Available: <https://www.nature.com/articles/nature06830>
- [15] R. Guimerà and M. Sales-Pardo, “Missing and spurious interactions and the reconstruction of complex networks,” *Proceedings of the National Academy of Sciences*, vol. 106, no. 52, pp. 22 073–22 078, 2009. [Online]. Available: <https://www.pnas.org/content/106/52/22073>
- [16] M. E. J. Newman, “Clustering and preferential attachment in growing networks,” *Physical review E, Statistical, nonlinear, and soft matter physics*, vol. 64, p. 025102, Jul 2001. [Online]. Available: <https://journals.aps.org/pre/abstract/10.1103/PhysRevE.64.025102>
- [17] L. A. Adamic and E. Adar, “Friends and neighbors on the web,” *Social Networks*, vol. 25, no. 3, pp. 211 – 230, 2003. [Online]. Available: <https://www.sciencedirect.com/science/article/abs/pii/S0378873303000091>
- [18] T. Zhou, L. Lü, and Y.-C. Zhang, “Predicting missing links via local information,” *The European Physical Journal B*, vol. 71, no. 4, pp. 623–630, Oct 2009. [Online]. Available: <https://link.springer.com/article/10.1140%2Fepjb%2Fe2009-00335-8>
- [19] P. Jaccard, “Distribution de la flore alpine dans le bassin des dranses et dans quelques régions voisines,” *Bull Soc Vaudoise Sci Nat*, vol. 37, pp. 241–272, 1901.
- [20] C. V. Cannistraci, G. Alanis-Lobato, and T. Ravasi, “From link-prediction in brain connectomes and protein interactomes to the local-community-paradigm in complex networks,” *Scientific Reports*, vol. 3, no. 1, apr 2013. [Online]. Available: <https://www.nature.com/articles/srep01613>

- [21] Z. Liu, Q.-M. Zhang, L. Lü, and T. Zhou, “Link prediction in complex networks: A local naïve bayes model,” *EPL (Europhysics Letters)*, vol. 96, no. 4, p. 48007, 2011. [Online]. Available: <https://iopscience.iop.org/article/10.1209/0295-5075/96/48007>
- [22] L. Katz, “A new status index derived from sociometric analysis,” *Psychometrika*, vol. 18, no. 1, pp. 39–43, Mar 1953. [Online]. Available: <https://link.springer.com/article/10.1007%2FBF02289026>
- [23] S. Brin and L. Page, “The anatomy of a large-scale hypertextual web search engine,” in *Proceedings of the Seventh International World Wide Web Conference*, vol. 30. Computer Networks and ISDN Systems, 1998, pp. 107–117. [Online]. Available: <https://www.sciencedirect.com/science/article/abs/pii/S016975529800110X>
- [24] G. Jeh and J. Widom, “Simrank: A measure of structural-context similarity,” in *Proceedings of the Eighth ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*, ser. KDD 2002. New York, NY, USA: ACM, 2002, pp. 538–543. [Online]. Available: <https://dl.acm.org/doi/10.1145/775047.775126>
- [25] Z. Wu, Y. Lin, H. Wan, and W. Jamil, “Predicting top-L missing links with node and link clustering information in large-scale networks,” *Journal of Statistical Mechanics: Theory and Experiment*, vol. 8, p. 083202, Aug. 2016. [Online]. Available: <https://iopscience.iop.org/article/10.1088/1742-5468/2016/08/083202>
- [26] L. Lü, C.-H. Jin, and T. Zhou, “Similarity index based on local paths for link prediction of complex networks,” *Physical review E., Statistical, nonlinear, and soft matter physics*, vol. 80, p. 046122, 2009. [Online]. Available: <https://journals.aps.org/pre/abstract/10.1103/PhysRevE.80.046122>
- [27] I. A. Kovács, K. Luck, K. Spirohn, Y. Wang, C. Pollis, S. Schlabach, W. Bian, D.-K. Kim, N. Kishore, T. Hao, M. A. Calderwood, M. Vidal, and A.-L. Barabási, “Network-based prediction of protein interactions,” *Nature*

- Communications*, vol. 10, 2019. [Online]. Available: <https://www.nature.com/articles/s41467-019-09177-y>
- [28] N. A. Christakis and J. H. Fowler, “Social contagion theory: examining dynamic social networks and human behavior,” *Statistics in medicine*, vol. 32, no. 4, pp. 556–577, 2013. [Online]. Available: <https://onlinelibrary.wiley.com/doi/10.1002/sim.5408>
- [29] N. A. Christakis, J. H. Fowler, and S. K. Walker, “Connected: The surprising power of our social networks and how they shape our lives,” *Journal of Family Theory & Review*, vol. 3, no. 3, pp. 220–224, 2011. [Online]. Available: <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1756-2589.2011.00097.x>
- [30] Y. Yao, R. Zhang, F. Yang, Y. Yuan, Q. Sun, Y. Qiu, and R. Hu, “Link prediction via layer relevance of multiplex networks,” *International Journal of Modern Physics C*, vol. 28, no. 08, p. 1750101, 2017. [Online]. Available: <https://www.worldscientific.com/doi/abs/10.1142/S0129183117501017>
- [31] H. Luo, L. Li, Y. Zhang, S. Fang, and X. Chen, “Link prediction in multiplex networks using a novel multiple-attribute decision-making approach,” *Knowledge-Based Systems*, vol. 219, p. 106904, 2021. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S0950705121001672>
- [32] V. Arnaboldi, M. Conti, M. L. Gala, A. Passarella, and F. Pezzoni, “Ego network structure in online social networks and its impact on information diffusion,” *Computer Communications*, vol. 76, pp. 26 – 41, 2016. [Online]. Available: <https://www.sciencedirect.com/science/article/abs/pii/S014036641500465X>
- [33] S. Li, J. Huang, Z. Zhang, J. Liu, T. Huang, and H. Chen, “Similarity-based future common neighbors model for link prediction in complex networks,” *Scientific reports*, vol. 8, no. 1, pp. 1–11, 2018. [Online]. Available: <https://www.nature.com/articles/s41598-018-35423-2>

- [34] Y. Yao, R. Zhang, F. Yang, J. Tang, Y. Yuan, and R. Hu, “Link prediction in complex networks based on the interactions among paths,” *Physica A: Statistical Mechanics and its Applications*, vol. 510, pp. 52–67, 2018. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S0378437118307751>
- [35] D. Liben-Nowell and J. Kleinberg, “The link prediction problem for social networks,” in *Proceedings of the Twelfth International Conference on Information and Knowledge Management*, ser. CIKM 2003. New York, NY, USA: ACM, 2003, pp. 556–559. [Online]. Available: <http://doi.acm.org/10.1145/956863.956972>
- [36] E. W. Dijkstra, “A note on two problems in connexion with graphs,” *Numerische Mathematik*, vol. 1, no. 1, pp. 269–271, Dec 1959. [Online]. Available: <https://link.springer.com/article/10.1007/BF01386390>
- [37] R. BELLMAN, “On a routing problem,” *Quarterly of Applied Mathematics*, vol. 16, no. 1, pp. 87–90, 1958. [Online]. Available: <http://www.jstor.org/stable/43634538>
- [38] R. W. Floyd, “Algorithm 97: Shortest path,” *Commun. ACM*, vol. 5, no. 6, pp. 345–, Jun. 1962. [Online]. Available: <https://dl.acm.org/doi/10.1145/367766.368168>
- [39] F. Fouss, A. Pirotte, J.-M. Renders, and M. Saerens, “Random-walk computation of similarities between nodes of a graph with application to collaborative recommendation,” *IEEE Trans. on Knowl. and Data Eng.*, vol. 19, no. 3, pp. 355–369, Mar. 2007. [Online]. Available: <https://ieeexplore.ieee.org/document/4072747/>
- [40] P. Chebotarev and E. Shamis, “The matrix-forest theorem and measuring relations in small social groups,” *CoRR*, vol. abs/math/0602070, 2006. [Online]. Available: <http://arxiv.org/abs/math/0602070>
- [41] W. Liu and L. Lü, “Link prediction based on local random walk,” *EPL (Europhysics Letters)*, vol. 89, no. 5, p. 58007, 2010. [Online]. Available: <https://iopscience.iop.org/article/10.1209/0295-5075/89/58007>

- [42] Z. Wu, Y. Lin, J. Wang, and S. Gregory, “Link prediction with node clustering coefficient,” *Physica A: Statistical Mechanics and its Applications*, vol. 452, pp. 1–8, 2016. [Online]. Available: <https://www.sciencedirect.com/science/article/abs/pii/S0378437116000777>
- [43] P. Wang, B. Xu, Y. Wu, and X. Zhou, “Link prediction in social networks: the state-of-the-art,” *Science China Information Sciences*, vol. 58, no. 1, pp. 1–38, 2015. [Online]. Available: <https://link.springer.com/article/10.1007/s11432-014-5237-y>
- [44] S. Haghani and M. R. Keyvanpour, “A systemic analysis of link prediction in social network,” *Artificial Intelligence Review*, vol. 52, no. 3, pp. 1961–1995, 2019. [Online]. Available: <https://link.springer.com/article/10.1007/s10462-017-9590-2>
- [45] N. Stanley, T. Bonacci, R. Kwitt, M. Niethammer, and P. J. Mucha, “Stochastic block models with multiple continuous attributes,” *Applied Network Science*, vol. 4, no. 1, pp. 1–22, 2019. [Online]. Available: <https://appliednetsci.springeropen.com/articles/10.1007/s41109-019-0170-z>
- [46] Z. Cao, L. Wang, and G. De Melo, “Link prediction via subgraph embedding-based convex matrix completion,” in *Proceedings of the AAAI Conference on Artificial Intelligence*, vol. 32, 2018. [Online]. Available: <https://ojs.aaai.org/index.php/AAAI/article/view/11655>
- [47] Y. Koren, R. Bell, and C. Volinsky, “Matrix factorization techniques for recommender systems,” *Computer*, vol. 42, no. 8, pp. 30–37, 2009. [Online]. Available: <https://ieeexplore.ieee.org/document/5197422>
- [48] Y.-L. Chen, C.-H. Hsiao, and C.-C. Wu, “An ensemble model for link prediction based on graph embedding,” *Decision Support Systems*, vol. 157, p. 113753, 2022. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S0167923622000240>

- [49] M. Wang, L. Qiu, and X. Wang, “A survey on knowledge graph embeddings for link prediction,” *Symmetry*, vol. 13, no. 3, 2021. [Online]. Available: <https://www.mdpi.com/2073-8994/13/3/485>
- [50] H. Cai, V. W. Zheng, and K. C.-C. Chang, “A comprehensive survey of graph embedding: Problems, techniques, and applications,” *IEEE Transactions on Knowledge and Data Engineering*, vol. 30, no. 9, pp. 1616–1637, 2018. [Online]. Available: <https://ieeexplore.ieee.org/document/8294302>
- [51] Y. Deng, “Recommender systems based on graph embedding techniques: A review,” *IEEE Access*, vol. 10, pp. 51 587–51 633, 2022. [Online]. Available: <https://ieeexplore.ieee.org/document/9772660>
- [52] I. Makarov, D. Kiselev, N. Nikitinsky, and L. Subelj, “Survey on graph embeddings and their applications to machine learning problems on graphs,” *PeerJ Computer Science*, vol. 7, p. e357, Feb. 2021. [Online]. Available: <https://doi.org/10.7717/peerj-cs.357>
- [53] M. A. Hasan, V. Chaoji, S. Salem, and M. Zaki, “Link prediction using supervised learning,” in *Proc. of SDM 06 workshop on Link Analysis, Counterterrorism and Security*, vol. 30, 2006, pp. 798–805.
- [54] C. D. Manning, P. Raghavan, and H. Schütze, *Introduction to Information Retrieval*. New York, NY, USA: Cambridge University Press, 2008.
- [55] A. Kumar, S. S. Singh, K. Singh, and B. Biswas, “Level-2 node clustering coefficient-based link prediction,” *Applied Intelligence*, Feb 2019. [Online]. Available: <https://link.springer.com/article/10.1007%2Fs10489-019-01413-8>
- [56] L. Lü and T. Zhou, “Link prediction in complex networks: A survey,” *Physica A: Statistical Mechanics and its Applications*, vol. 390, no. 6, pp. 1150–1170, 2011. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S037843711000991X>

- [57] V. Martínez, F. Berzal, and J.-C. Cubero, “A survey of link prediction in complex networks,” *ACM Comput. Surv.*, vol. 49, no. 4, dec 2016. [Online]. Available: <https://dl.acm.org/doi/10.1145/3012704>
- [58] A. Kumar, S. S. Singh, K. Singh, and B. Biswas, “Link prediction techniques, applications, and performance: A survey,” *Physica A: Statistical Mechanics and its Applications*, vol. 553, p. 124289, 2020. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S0378437120300856>
- [59] N. N. Daud, S. H. Ab Hamid, M. Saadoon, F. Sahran, and N. B. Anuar, “Applications of link prediction in social networks: A review,” *Journal of Network and Computer Applications*, vol. 166, p. 102716, 2020. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S1084804520301909>
- [60] T. Zhou, “Progresses and challenges in link prediction,” *iScience*, vol. 24, no. 11, p. 103217, 2021. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S2589004221011858>
- [61] S. T. Roweis and L. K. Saul, “Nonlinear dimensionality reduction by locally linear embedding,” *Science*, vol. 290, no. 5500, pp. 2323–2326, 2000. [Online]. Available: <https://science.sciencemag.org/content/290/5500/2323>
- [62] B. Perozzi, R. Al-Rfou, and S. Skiena, “Deepwalk: Online learning of social representations,” in *Proceedings of the 20th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*, ser. KDD 2014. New York, NY, USA: Association for Computing Machinery, 2014, pp. 701–710. [Online]. Available: <https://dl.acm.org/doi/10.1145/2623330.2623732>
- [63] C. Wang, V. Satuluri, and S. Parthasarathy, “Local probabilistic models for link prediction,” in *Seventh IEEE International Conference on Data Mining (ICDM 2007)*, Oct 2007, pp. 322–331. [Online]. Available: <https://ieeexplore.ieee.org/document/4470256>

- [64] K. Yu, W. Chu, S. Yu, V. Tresp, and Z. Xu, “Stochastic relational models for discriminative link prediction,” in *Advances in Neural Information Processing Systems 19*, B. Schölkopf, J. C. Platt, and T. Hoffman, Eds. MIT Press, 2007, pp. 1553–1560. [Online]. Available: <http://papers.nips.cc/paper/2998-stochastic-relational-models-for-discriminative-link-prediction.pdf>
- [65] J. R. Doppa, J. Yu, P. Tadepalli, and L. Getoor, “Learning algorithms for link prediction based on chance constraints,” in *Machine Learning and Knowledge Discovery in Databases*, J. L. Balcázar, F. Bonchi, A. Gionis, and M. Sebag, Eds. Berlin, Heidelberg: Springer Berlin Heidelberg, 2010, pp. 344–360. [Online]. Available: https://link.springer.com/chapter/10.1007/978-3-642-15880-3_28
- [66] K. Anand and G. Bianconi, “Entropy measures for networks: toward an information theory of complex topologies,” *Physical review E., Statistical, nonlinear, and soft matter physics*, vol. 80, no. 4 Pt 2, p. 045102, October 2009. [Online]. Available: <https://journals.aps.org/pre/abstract/10.1103/PhysRevE.80.045102>
- [67] M. Belkin and P. Niyogi, “Laplacian eigenmaps and spectral techniques for embedding and clustering,” in *Proceedings of the 14th International Conference on Neural Information Processing Systems: Natural and Synthetic*, ser. NIPS 2001. Cambridge, MA, USA: MIT Press, 2001, pp. 585–591. [Online]. Available: <https://dl.acm.org/doi/10.5555/2980539.2980616>
- [68] A. Grover and J. Leskovec, “Node2vec: Scalable feature learning for networks,” in *Proceedings of the 22nd ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*, ser. KDD 2016. New York, NY, USA: Association for Computing Machinery, 2016, pp. 855–864. [Online]. Available: <https://dl.acm.org/doi/10.1145/2939672.2939754>
- [69] S. M. Kazemi and D. Poole, “Simple embedding for link prediction in knowledge graphs,” in *Proceedings of the 32nd International Conference on Neural Information Processing Systems*, ser. NIPS 2018. Red Hook, NY,

- USA: Curran Associates Inc., 2018, pp. 4289–4300. [Online]. Available: <https://dl.acm.org/doi/10.5555/3327144.3327341>
- [70] K. Berahmand, E. Nasiri, S. Forouzandeh, and Y. Li, “A preference random walk algorithm for link prediction through mutual influence nodes in complex networks,” *Journal of King Saud University - Computer and Information Sciences*, 2021. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S1319157821001099>
- [71] K. Berahmand, E. Nasiri, M. Rostami, and S. Forouzandeh, “A modified deepwalk method for link prediction in attributed social network,” *Computing, Springer*, 2021. [Online]. Available: <https://link.springer.com/article/10.1007/s00607-021-00982-2>
- [72] Z. Huang, “Link prediction based on graph topology: The predictive value of generalized clustering coefficient,” *SSRN Electronic Journal*, 03 2010. [Online]. Available: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1634014
- [73] J. Ding, L. Jiao, J. Wu, Y. Hou, and Y. Qi, “Prediction of missing links based on multi-resolution community division,” *Physica A: Statistical Mechanics and its Applications*, vol. 417, pp. 76 – 85, 2015. [Online]. Available: <https://www.sciencedirect.com/science/article/abs/pii/S0378437114007638>
- [74] J. Ding, L. Jiao, J. Wu, and F. Liu, “Prediction of missing links based on community relevance and ruler inference,” *Knowledge-Based Systems*, vol. 98, pp. 200 – 215, 2016. [Online]. Available: <https://www.sciencedirect.com/science/article/abs/pii/S095070511600054X>
- [75] S. S. Singh, S. Mishra, A. Kumar, and B. Biswas, “Clp-id: Community-based link prediction using information diffusion,” *Information Sciences*, vol. 514, pp. 402 – 433, 2020. [Online]. Available: <https://www.sciencedirect.com/science/article/abs/pii/S0020025519310734>

- [76] F. Liu, S. Xue, J. Wu, C. Zhou, W. Hu, C. Paris, S. Nepal, J. Yang, and P. S. Yu, “Deep learning for community detection: Progress, challenges and opportunities,” in *Proceedings of the Twenty-Ninth International Joint Conference on Artificial Intelligence*, ser. IJCAI 2020, 2021. [Online]. Available: <https://dl.acm.org/doi/abs/10.5555/3491440.3492133>
- [77] X. Su, S. Xue, F. Liu, J. Wu, J. Yang, C. Zhou, W. Hu, C. Paris, S. Nepal, D. Jin, Q. Z. Sheng, and P. S. Yu, “A comprehensive survey on community detection with deep learning,” *IEEE Transactions on Neural Networks and Learning Systems*, pp. 1–21, 2022. [Online]. Available: <https://ieeexplore.ieee.org/document/9732192>
- [78] F. Liu, Z. Li, B. Wang, J. Wu, J. Yang, J. Huang, Y. Zhang, W. Wang, S. Xue, S. Nepal, and Q. Z. Sheng, “eriskcom: an e-commerce risky community detection platform,” *The VLDB Journal*, 2022. [Online]. Available: <https://link.springer.com/article/10.1007/s00778-021-00723-z>
- [79] R. A. Rossi, A. Rao, S. Kim, E. Koh, N. K. Ahmed, and G. Wu, *From Closing Triangles to Higher-Order Motif Closures for Better Unsupervised Online Link Prediction*. New York, NY, USA: Association for Computing Machinery, 2021, pp. 4085–4093. [Online]. Available: <https://dl.acm.org/doi/abs/10.1145/3459637.3481920>
- [80] K. Li, L. Tu, and L. Chai, “Ensemble-model-based link prediction of complex networks,” *Computer Networks*, vol. 166, p. 106978, 2020. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S1389128619308710>
- [81] E. Bastami, A. Mahabadi, and E. Taghizadeh, “A gravitation-based link prediction approach in social networks,” *Swarm and Evolutionary Computation*, vol. 44, pp. 176–186, 2019. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S2210650217304704>
- [82] G. Chen, C. Xu, J. Wang, J. Feng, and J. Feng, “Nonnegative matrix factorization for link prediction in directed complex networks using pagerank and asymmetric

- link clustering information,” *Expert Systems with Applications*, vol. 148, p. 113290, 2020. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S0957417420301159>
- [83] S.-Y. Liu, J. Xiao, and X.-K. Xu, “Link prediction in signed social networks: From status theory to motif families,” *IEEE Transactions on Network Science and Engineering*, vol. 7, no. 3, pp. 1724–1735, 2020. [Online]. Available: <https://ieeexplore.ieee.org/document/8892638>
- [84] J. Wang, Y. Ma, M. Liu, and W. Shen, “Link prediction based on community information and its parallelization,” *IEEE Access*, vol. 7, pp. 62 633–62 645, 2019. [Online]. Available: <https://ieeexplore.ieee.org/document/8673750>
- [85] W. W. Zachary, “An information flow model for conflict and fission in small groups,” *Journal of anthropological research*, pp. 452–473, 1977.
- [86] P. M. Gleiser and L. Danon, “Community structure in jazz,” *Advances in Complex Systems*, vol. 06, no. 04, pp. 565–573, 2003.
- [87] V. Batagelj and A. Mrvar, “Pajek program for analysis and visualization of large networks reference manual list of commands with short explanation version be,” 02 1999.
- [88] D. Watts and S. H. Strogatz, “Collective dynamics of small world networks,” *Nature*, vol. 393, pp. 440–2, 07 1998. [Online]. Available: <https://www.nature.com/articles/30918>
- [89] N. P. Hummon and P. Dereian, “Connectivity in a citation network: The development of dna theory,” *Social Networks*, vol. 11, no. 1, pp. 39–63, 1989. [Online]. Available: <https://www.sciencedirect.com/science/article/abs/pii/0378873389900178>
- [90] A. Barabási, H. Jeong, Z. Néda, E. Ravasz, A. Schubert, and T. Vicsek, “Evolution of the social network of scientific collaborations,” *Physica A: Statistical Mechanics*

- and its Applications*, vol. 311, no. 3, pp. 590 – 614, 2002. [Online]. Available: <https://www.sciencedirect.com/science/article/abs/pii/S0378437102007367>
- [91] D. Davis, R. Lichtenwalter, and N. V. Chawla, “Multi-relational link prediction in heterogeneous information networks,” in *2011 International Conference on Advances in Social Networks Analysis and Mining*, 2011, pp. 281–288. [Online]. Available: <https://ieeexplore.ieee.org/document/5992590>
- [92] H. Shakibian, N. M. Charkari, and S. Jalili, “A multilayered approach for link prediction in heterogeneous complex networks,” *Journal of Computational Science*, vol. 17, pp. 73–82, 2016. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S187775031630179X>
- [93] C. De Bacco, E. A. Power, D. B. Larremore, and C. Moore, “Community detection, link prediction, and layer interdependence in multilayer networks,” *Physical review E, Statistical, nonlinear, and soft matter physics*, vol. 95, p. 042317, Apr 2017. [Online]. Available: <https://link.aps.org/doi/10.1103/PhysRevE.95.042317>
- [94] M. Koptelov, A. Zimmermann, and B. Crémilleux, “Link prediction in multi-layer networks and its application to drug design,” in *International Symposium on Intelligent Data Analysis*. Springer, 2018, pp. 175–187. [Online]. Available: https://link.springer.com/chapter/10.1007/978-3-030-01768-2_15
- [95] T. Fan, S. Xiong, W. Zhao, and T. Yu, “Information spread link prediction through multi-layer of social network based on trusted central nodes,” *Peer-to-Peer Networking and Applications*, vol. 12, no. 5, pp. 1028–1040, 2019. [Online]. Available: <https://link.springer.com/article/10.1007/s12083-019-00743-1>
- [96] S. Boccaletti, G. Bianconi, R. Criado, C. del Genio, J. Gómez-Gardeñes, M. Romance, I. Sendiña-Nadal, Z. Wang, and M. Zanin, “The structure and dynamics of multilayer networks,” *Physics Reports*, vol. 544, no. 1, pp. 1–122, 2014. [Online]. Available: <https://www.sciencedirect.com/science/article/abs/pii/S0370157314002105>

- [97] V. Nicosia, G. Bianconi, V. Latora, and M. Barthelemy, “Growing multiplex networks,” *Physical Review Letters*, vol. 111, p. 058701, Jul 2013. [Online]. Available: <https://journals.aps.org/prl/abstract/10.1103/PhysRevLett.111.058701>
- [98] M. Szell, R. Lambiotte, and S. Thurner, “Multirelational organization of large-scale social networks in an online world,” *Proceedings of the National Academy of Sciences*, vol. 107, no. 31, pp. 13 636–13 641, 2010. [Online]. Available: <https://www.pnas.org/content/107/31/13636>
- [99] K.-M. Lee, B. Min, and K.-I. Goh, “Towards real-world complexity: an introduction to multiplex networks,” *The European Physical Journal B*, vol. 88, no. 2, pp. 1–20, 2015. [Online]. Available: <https://link.springer.com/article/10.1140%2Fepjb%2Fe2015-50742-1>
- [100] D. Hristova, A. Noulas, C. Brown, M. Musolesi, and C. Mascolo, “A multilayer approach to multiplexity and link prediction in online geo-social networks,” *EPJ Data Science*, vol. 5, no. 1, p. 24, 2016. [Online]. Available: <https://epjdatascience.springeropen.com/articles/10.1140/epjds/s13688-016-0087-z>
- [101] M. Jalili, Y. Orouskhani, M. Asgari, N. Alipourfard, and M. Perc, “Link prediction in multiplex online social networks,” *Royal Society Open Science*, vol. 4, no. 2, p. 160863, 2017. [Online]. Available: <https://royalsocietypublishing.org/doi/10.1098/rsos.160863>
- [102] S. Sharma and A. Singh, “An efficient method for link prediction in complex multiplex networks,” in *2015 11th International Conference on Signal-Image Technology Internet-Based Systems (SITIS)*, 2015, pp. 453–459. [Online]. Available: <https://ieeexplore.ieee.org/document/7400602>
- [103] M. Pujari and R. Kanawati, “Link prediction in multiplex networks,” *Networks & Heterogeneous Media*, vol. 10, no. 1, p. 17, 2015. [Online]. Available: <https://www.aimsociences.org/article/doi/10.3934/nhm.2015.10.17>

- [104] A. Hajibagheri, G. Sukthankar, and K. Lakkaraju, “A holistic approach for link prediction in multiplex networks,” in *International conference on social informatics*. Springer, 2016, pp. 55–70. [Online]. Available: https://link.springer.com/chapter/10.1007%2F978-3-319-47874-6_5
- [105] Y. Yao, R. Zhang, F. Yang, Y. Yuan, Q. Sun, Y. Qiu, and R. Hu, “Link prediction via layer relevance of multiplex networks,” *International Journal of Modern Physics C*, vol. 28, no. 08, p. 1750101, 2017. [Online]. Available: <https://www.worldscientific.com/doi/abs/10.1142/S0129183117501017>
- [106] H. Mandal, M. Mirchev, S. Gramatikov, and I. Mishkovski, “Multilayer link prediction in online social networks,” in *2018 26th Telecommunications Forum (TELFOR)*, 2018, pp. 1–4. [Online]. Available: <https://ieeexplore.ieee.org/document/8612122>
- [107] S. Najari, M. Salehi, V. Ranjbar, and M. Jalili, “Link prediction in multiplex networks based on interlayer similarity,” *Physica A: Statistical Mechanics and its Applications*, vol. 536, p. 120978, 2019. [Online]. Available: <https://www.sciencedirect.com/science/article/abs/pii/S0378437119305849>
- [108] Z. Samei and M. Jalili, “Discovering spurious links in multiplex networks based on interlayer relevance,” *Journal of Complex Networks*, vol. 7, no. 5, pp. 641–658, 03 2019. [Online]. Available: <https://academic.oup.com/comnet/article-abstract/7/5/641/5372352>
- [109] L. Chen, M. Gao, B. Li, W. Liu, and B. Chen, “Detect potential relations by link prediction in multi-relational social networks,” *Decision Support Systems*, vol. 115, pp. 78–91, 2018. [Online]. Available: <https://www.sciencedirect.com/science/article/abs/pii/S016792361830157X>
- [110] A. M. Abdolhosseini-Qomi, S. H. Jafari, A. Taghizadeh, N. Yazdani, M. Asadpour, and M. Rahgozar, “Link prediction in real-world multiplex networks via layer

- reconstruction method,” *Royal Society Open Science*, vol. 7, no. 7, p. 191928, 2020. [Online]. Available: <https://royalsocietypublishing.org/doi/10.1098/rsos.191928>
- [111] Z. Zhang, L. Cui, and J. Wu, “Exploring an edge convolution and normalization based approach for link prediction in complex networks,” *Journal of Network and Computer Applications*, vol. 189, p. 103113, 2021. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S1084804521001338>
- [112] E. Nasiri, K. Berahmand, and Y. Li, “A new link prediction in multiplex networks using topologically biased random walks,” *Chaos, Solitons & Fractals*, vol. 151, p. 111230, 2021. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S0960077921005841>
- [113] E. Nasiri, K. Berahmand, Z. Samei, and Y. Li, “Impact of centrality measures on the common neighbors in link prediction for multiplex networks,” *Big Data*, vol. 10, no. 2, pp. 138–150, 2022. [Online]. Available: <https://www.liebertpub.com/doi/10.1089/big.2021.0254>
- [114] R. Tang, X. Chen, C. Wei, Q. Li, W. Wang, H. Wang, and W. Wang, “Interlayer link prediction based on multiple network structural attributes,” *Computer Networks*, vol. 203, p. 108651, 2022. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S138912862100534X>
- [115] D. Mohapatra, “A hybrid approach for pair-wise layer similarity in a multiplex network,” *Social Network Analysis and Mining*, vol. 11, 2021. [Online]. Available: <https://link.springer.com/article/10.1007/s13278-021-00802-7>
- [116] S. Bai, Y. Zhang, L. Li, N. Shan, and X. Chen, “Effective link prediction in multiplex networks: A topsis method,” *Expert Systems with Applications*, vol. 177, p. 114973, 2021. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S0957417421004140>
- [117] X. Ding, C. Ma, X. Zhang, H.-S. Chen, and H.-F. Zhang, “Soidp: Predicting interlayer links in multiplex networks,” *IEEE Transactions on*

- Computational Social Systems*, pp. 1–11, 2021. [Online]. Available: <https://ieeexplore.ieee.org/abstract/document/9394590>
- [118] N. Shan, L. Li, Y. Zhang, S. Bai, and X. Chen, “Supervised link prediction in multiplex networks,” *Knowledge-Based Systems*, vol. 203, p. 106168, 2020. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S0950705120304068>
- [119] D. Malhotra and R. Goyal, “Supervised-learning link prediction in single layer and multiplex networks,” *Machine Learning with Applications*, vol. 6, p. 100086, 2021. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S2666827021000438>
- [120] E. Lazega *et al.*, *The collegial phenomenon: The social mechanisms of cooperation among peers in a corporate law partnership*. Oxford University Press on Demand, 2001.
- [121] T. A. B. Snijders, P. E. Pattison, G. L. Robins, and M. S. Handcock, “New specifications for exponential random graph models,” *Sociological Methodology*, vol. 36, no. 1, pp. 99–153, 2006. [Online]. Available: <https://journals.sagepub.com/doi/10.1111/j.1467-9531.2006.00176.x>
- [122] M. Magnani, B. Micenkova, and L. Rossi, “Combinatorial analysis of multiple networks,” *arXiv preprint arXiv:1303.4986*, 2013.
- [123] M. Vickers and S. Chan, “Representing classroom social structure,” *Victoria Institute of Secondary Education, Melbourne*, 1981.
- [124] D. M. Boswell, “Strategy and transaction in an african factory: African workers and indian management in a zambian town. bruce kapferer,” *Economic Development and Cultural Change*, vol. 23, no. 4, pp. 786–793, 1975. [Online]. Available: <https://www.journals.uchicago.edu/doi/10.1086/450846>

- [125] J. Coleman, E. Katz, and H. Menzel, “The diffusion of an innovation among physicians,” *Sociometry*, vol. 20, no. 4, pp. 253–270, 1957. [Online]. Available: <http://www.jstor.org/stable/2785979>
- [126] M. De Domenico, M. A. Porter, and A. Arenas, “MuxViz: a tool for multilayer analysis and visualization of networks,” *Journal of Complex Networks*, vol. 3, no. 2, pp. 159–176, 10 2014. [Online]. Available: <https://academic.oup.com/comnet/article/3/2/159/376726>
- [127] M. De Domenico, A. Lancichinetti, A. Arenas, and M. Rosvall, “Identifying modular flows on multilayer networks reveals highly overlapping organization in interconnected systems,” *Physical review E., Statistical, nonlinear, and soft matter physics*, vol. 5, p. 011027, Mar 2015. [Online]. Available: <https://journals.aps.org/prx/abstract/10.1103/PhysRevX.5.011027>
- [128] M. De Domenico, V. Nicosia, A. Arenas, and V. Latora, “Structural reducibility of multilayer networks,” *Nature communications*, vol. 6, no. 1, pp. 1–9, 2015. [Online]. Available: <https://www.nature.com/articles/ncomms7864>
- [129] H. R. de Sá and R. B. C. Prudêncio, “Supervised link prediction in weighted networks,” in *The 2011 International Joint Conference on Neural Networks*, 2011, pp. 2281–2288. [Online]. Available: <https://ieeexplore.ieee.org/document/6033513>
- [130] P.-N. Tan, M. Steinbach, and V. Kumar, *Introduction to data mining*. Pearson Education India, 2016.
- [131] A.-L. Barabási and E. Bonabeau, “Scale-free networks,” *Scientific american*, vol. 288, no. 5, pp. 60–69, 2003. [Online]. Available: <https://www.jstor.org/stable/26060284>
- [132] Q. Ou, Y.-D. Jin, T. Zhou, B.-H. Wang, and B.-Q. Yin, “Power-law strength-degree correlation from resource-allocation dynamics on weighted networks,” *Physical review E., Statistical, nonlinear, and soft matter physics*, vol. 75, p. 021102, Feb

2007. [Online]. Available: <https://journals.aps.org/pre/abstract/10.1103/PhysRevE.75.021102>
- [133] J. Saramäki, M. Kivelä, J.-P. Onnela, K. Kaski, and J. Kertész, “Generalizations of the clustering coefficient to weighted complex networks,” *Physical review E, Statistical, nonlinear, and soft matter physics*, vol. 75, p. 027105, Feb 2007. [Online]. Available: <https://journals.aps.org/pre/abstract/10.1103/PhysRevE.75.027105>
- [134] L. Pio-Lopez, A. Valdeolivas, L. Tichit, É. Remy, and A. Baudot, “Multiverse: a multiplex and multiplex-heterogeneous network embedding approach,” *Scientific Reports*, vol. 11, 2021. [Online]. Available: <https://www.nature.com/articles/s41598-021-87987-1>
- [135] T. Raeder, O. Lizardo, D. Hachen, and N. V. Chawla, “Predictors of short-term decay of cell phone contacts in a large scale communication network,” *Social Networks*, vol. 33, no. 4, pp. 245 – 257, 2011. [Online]. Available: <https://www.sciencedirect.com/science/article/abs/pii/S0378873311000463>
- [136] T. Tylanda, R. Angelova, and S. Bedathur, “Towards time-aware link prediction in evolving social networks,” in *Proceedings of the 3rd Workshop on Social Network Mining and Analysis*, ser. SNA-KDD 2009. New York, NY, USA: Association for Computing Machinery, 2009, pp. 1–10. [Online]. Available: <https://dl.acm.org/doi/10.1145/1731011.1731020>
- [137] M. Berlingerio, A. Gionis, B. Bringmann, and F. Bonchi, “Learning and predicting the evolution of social networks,” *IEEE Intelligent Systems*, vol. 25, no. 04, pp. 26–35, jul 2010. [Online]. Available: <https://ieeexplore.ieee.org/document/5552587>
- [138] L. Tabourier, A. Libert, and R. Lambiotte, “Predicting links in ego-networks using temporal information,” *EPJ Data Science*, vol. 5, 2016. [Online]. Available: <https://epjdatascience.springeropen.com/articles/10.1140/epjds/s13688-015-0062-0>

- [139] M. Toprak, C. L. Boldrini, A. Passarella, and M. Conti, “Harnessing the power of ego network layers for link prediction in online social networks,” *IEEE Transactions on Computational Social Systems*, pp. 1–13, 2022. [Online]. Available: <https://ieeexplore.ieee.org/document/9733385>
- [140] A. Rezaeipناه, G. Ahmadi, and S. Sechin Matoori, “A classification approach to link prediction in multiplex online ego-social networks,” *Social Network Analysis and Mining*, vol. 10, 2020. [Online]. Available: <https://link.springer.com/article/10.1007/s13278-020-00639-6>
- [141] S. Stolz and C. Schlereth, “Predicting tie strength with ego network structures,” *Journal of Interactive Marketing*, vol. 54, pp. 40–52, 2021. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S1094996820301390>
- [142] N. A. Christakis, J. H. Fowler, and S. K. Walker, “Connected: The surprising power of our social networks and how they shape our lives,” *Journal of Family Theory & Review*, vol. 3, no. 3, pp. 220–224, 2011. [Online]. Available: <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1756-2589.2011.00097.x>
- [143] M. S. Granovetter, “The strength of weak ties,” *American Journal of Sociology*, vol. 78, no. 6, pp. 1360–1380, 1973. [Online]. Available: <https://www.journals.uchicago.edu/doi/10.1086/225469>
- [144] E. Gilbert and K. Karahalios, “Predicting tie strength with social media,” in *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, ser. CHI 2009. New York, NY, USA: Association for Computing Machinery, 2009, pp. 211–220. [Online]. Available: <https://dl.acm.org/doi/10.1145/1518701.1518736>
- [145] E. Gilbert, “Predicting tie strength in a new medium,” in *Proceedings of the ACM 2012 Conference on Computer Supported Cooperative Work*, ser. CSCW 2012. New York, NY, USA: Association for Computing Machinery, 2012, pp. 1047–1056. [Online]. Available: <https://dl.acm.org/doi/10.1145/2145204.2145360>

- [146] V. Arnaboldi, A. Guazzini, and A. Passarella, “Egocentric online social networks: Analysis of key features and prediction of tie strength in facebook,” *Computer Communications*, vol. 36, no. 10, pp. 1130 – 1144, 2013. [Online]. Available: <https://www.sciencedirect.com/science/article/abs/pii/S0140366413000856>
- [147] P. V. Marsden and K. E. Campbell, “Measuring Tie Strength*,” *Social Forces*, vol. 63, no. 2, pp. 482–501, 12 1984. [Online]. Available: <https://www.jstor.org/stable/2579058>
- [148] A. Biswas and B. Biswas, “Investigating community structure in perspective of ego network,” *Expert Systems with Applications*, vol. 42, no. 20, pp. 6913 – 6934, 2015. [Online]. Available: <https://www.sciencedirect.com/science/article/abs/pii/S0957417415003292>
- [149] S. Pei, L. Muchnik, J. S. Andrade Jr, Z. Zheng, and H. A. Makse, “Searching for superspreaders of information in real-world social media,” *Scientific reports*, vol. 4, p. 5547, 2014. [Online]. Available: <https://www.nature.com/articles/srep05547>
- [150] M. Friedman, “The use of ranks to avoid the assumption of normality implicit in the analysis of variance,” *Journal of the american statistical association*, vol. 32, no. 200, pp. 675–701, 1937.
- [151] J. Derrac, S. García, D. Molina, and F. Herrera, “A practical tutorial on the use of nonparametric statistical tests as a methodology for comparing evolutionary and swarm intelligence algorithms,” *Swarm and Evolutionary Computation*, vol. 1, no. 1, pp. 3–18, 2011. [Online]. Available: <https://www.sciencedirect.com/science/article/abs/pii/S2210650211000034>
- [152] S. Milgram, “The small world problem,” *Psychology today*, vol. 2, no. 1, pp. 60–67, 1967.
- [153] D. J. Watts, “Networks, dynamics, and the small-world phenomenon,” *American Journal of Sociology*, vol. 105, no. 2, pp. 493–527, 1999. [Online]. Available: <https://www.journals.uchicago.edu/doi/10.1086/210318>

- [154] D. J. Watts and S. H. Strogatz, “Collective dynamics of ‘small-world’ networks,” *nature*, vol. 393, no. 6684, pp. 440–442, 1998. [Online]. Available: <https://www.nature.com/articles/30918>
- [155] J. M. Kleinberg, “Navigation in a small world,” *Nature*, vol. 406, no. 6798, pp. 845–845, 2000. [Online]. Available: <https://www.nature.com/articles/35022643>
- [156] J. Kleinberg, “The small-world phenomenon: An algorithmic perspective,” in *Proceedings of the Thirty-Second Annual ACM Symposium on Theory of Computing*, ser. STOC 2000. New York, NY, USA: Association for Computing Machinery, 2000, p. 163–170. [Online]. Available: <https://dl.acm.org/doi/10.1145/335305.335325>
- [157] P. W. Holland and S. Leinhardt, “Transitivity in structural models of small groups,” *Comparative Group Studies*, vol. 2, no. 2, pp. 107–124, 1971. [Online]. Available: <https://journals.sagepub.com/doi/10.1177/104649647100200201>
- [158] A.-L. Barabási and R. Albert, “Emergence of scaling in random networks,” *Science*, vol. 286, no. 5439, pp. 509–512, 1999. [Online]. Available: <https://science.sciencemag.org/content/286/5439/509>
- [159] A. Santra, S. Bhowmick, and S. Chakravarthy, “Efficient community re-creation in multilayer networks using boolean operations,” in *International Conference on Computational Science, ICCS 2017, 12-14 June 2017, Zurich, Switzerland*, vol. 108. Procedia Computer Science, 2017, pp. 58–67. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S1877050917308748>
- [160] M. Qu, J. Tang, J. Shang, X. Ren, M. Zhang, and J. Han, “An attention-based collaboration framework for multi-view network representation learning,” in *Proceedings of the 2017 ACM on Conference on Information and Knowledge Management*, ser. CIKM 2017. New York, NY, USA: Association for Computing Machinery, 2017, p. 1767–1776. [Online]. Available: <https://dl.acm.org/doi/10.1145/3132847.3133021>

- [161] H. Zhang, L. Qiu, L. Yi, and Y. Song, “Scalable multiplex network embedding,” in *Proceedings of the Twenty-Seventh International Joint Conference on Artificial Intelligence, IJCAI-18*. International Joint Conferences on Artificial Intelligence Organization, 7 2018, pp. 3082–3088. [Online]. Available: <https://www.ijcai.org/proceedings/2018/428>
- [162] S. S. Singh, A. Kumar, K. Singh, and B. Biswas, “C2im: Community based context-aware influence maximization in social networks,” *Physica A: Statistical Mechanics and its Applications*, vol. 514, pp. 796 – 818, 2019. [Online]. Available: <https://www.sciencedirect.com/science/article/abs/pii/S0378437118312822>
- [163] L. C. Freeman, “Centrality in social networks conceptual clarification,” *Social Networks*, vol. 1, no. 3, pp. 215–239, 1978. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/0378873378900217>
- [164] U. Brandes, “On variants of shortest-path betweenness centrality and their generic computation,” *Social Networks*, vol. 30, no. 2, pp. 136–145, 2008. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S0378873307000731>
- [165] P. Boldi and S. Vigna, “Axioms for centrality,” *Internet Mathematics*, vol. 10, no. 3-4, pp. 222–262, 2014. [Online]. Available: <https://www.tandfonline.com/doi/abs/10.1080/15427951.2013.865686>
- [166] P. Domingos and M. Richardson, “Mining the network value of customers,” in *Proceedings of the Seventh ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*, ser. KDD 2001. New York, NY, USA: Association for Computing Machinery, 2001, p. 57–66. [Online]. Available: <https://dl.acm.org/doi/10.1145/502512.502525>
- [167] D. Kempe, J. Kleinberg, and E. Tardos, “Maximizing the spread of influence through a social network,” in *Proceedings of the Ninth ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*, ser. KDD

2003. New York, NY, USA: Association for Computing Machinery, 2003, p. 137–146. [Online]. Available: <https://dl.acm.org/doi/10.1145/956750.956769>
- [168] J. Leskovec, A. Krause, C. Guestrin, C. Faloutsos, J. VanBriesen, and N. Glance, “Cost-effective outbreak detection in networks,” in *Proceedings of the 13th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*, ser. KDD 2007. New York, NY, USA: Association for Computing Machinery, 2007, p. 420–429. [Online]. Available: <https://dl.acm.org/doi/10.1145/1281192.1281239>
- [169] W. Chen, C. Wang, and Y. Wang, “Scalable influence maximization for prevalent viral marketing in large-scale social networks,” in *Proceedings of the 16th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*, ser. KDD 2010. New York, NY, USA: Association for Computing Machinery, 2010, p. 1029–1038. [Online]. Available: <https://dl.acm.org/doi/10.1145/1835804.1835934>
- [170] S. Das and A. Biswas, “Deployment of information diffusion for community detection in online social networks: A comprehensive review,” *IEEE Transactions on Computational Social Systems*, vol. 8, no. 5, pp. 1083–1107, 2021. [Online]. Available: <https://ieeexplore.ieee.org/document/9432477>
- [171] D. Xygalatas, “Nickolas a. christakis and james h. fowler (2009), connected: The surprising power of our social networks and how they shape our lives, little, brown, new york, ny. 353 pages.” *Journal of Cognition and Culture*, vol. 10, pp. 3–4, 01 2010. [Online]. Available: https://brill.com/view/journals/jocc/10/3-4/article-p401_10.xml
- [172] M. Magnani, O. Hanteer, R. Interdonato, L. Rossi, and A. Tagarelli, “Community detection in multiplex networks,” *ACM Comput. Surv.*, vol. 54, no. 3, may 2021. [Online]. Available: <https://dl.acm.org/doi/10.1145/3444688>
- [173] P. Bródka, K. Musial, and J. Jankowski, “Interacting spreading processes in multilayer networks: A systematic review,” *IEEE Access*, vol. 8, pp.

- 10316–10341, 2020. [Online]. Available: <https://ieeexplore.ieee.org/document/8955870>
- [174] Y. Lv, S. Huang, T. Zhang, and B. Gao, “Application of multilayer network models in bioinformatics,” *Frontiers in Genetics*, vol. 12, 2021. [Online]. Available: <https://www.frontiersin.org/articles/10.3389/fgene.2021.664860>
- [175] K. R. Finn, M. J. Silk, M. A. Porter, and N. Pinter-Wollman, “The use of multilayer network analysis in animal behaviour,” *Animal Behaviour*, vol. 149, pp. 7–22, 2019. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S0003347218304020>
- [176] A. A. Ibrahim, D. Leite, and C. De Bacco, “Sustainable optimal transport in multilayer networks,” *Phys. Rev. E*, vol. 105, p. 064302, Jun 2022. [Online]. Available: <https://link.aps.org/doi/10.1103/PhysRevE.105.064302>
- [177] J. Wu, C. Pu, L. Li, and G. Cao, “Traffic dynamics on multilayer networks,” *Digital Communications and Networks*, vol. 6, no. 1, pp. 58–63, 2020. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S2352864818301135>
- [178] J. Chen, M.-B. Hu, and M. Li, “Traffic-driven epidemic spreading in multiplex networks,” *Phys. Rev. E*, vol. 101, p. 012301, Jan 2020. [Online]. Available: <https://link.aps.org/doi/10.1103/PhysRevE.101.012301>
- [179] X.-L. Jing, M.-B. Hu, and J. Chen, “Suppressing traffic-driven epidemic spreading in multiplex networks by effective traffic-flow assignment strategy,” *Physica A: Statistical Mechanics and its Applications*, vol. 594, p. 126973, 2022. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S0378437122000693>

Appendix A

List of Publications

First Author Publications

1. **Shivansh Mishra**, Shashank Sheshar Singh, Ajay Kumar, and Bhaskar Biswas, "ELP: Link prediction in social networks based on ego network perspective", in *Physica A: Statistical Mechanics and its Applications*, Volume 605, November 2022, ISSN: 0378-4371, **DOI:10.1016/j.physa.2022.128008 (SCI, IF:3.778)**.
2. **Shivansh Mishra**, Shashank Sheshar Singh, Ajay Kumar, and Bhaskar Biswas, "HOPLP-MUL: link prediction in multiplex networks based on higher order paths and layer fusion", in *Applied Intelligence*, May 2022, ISSN: 1573-7497, **DOI:10.1007/s10489-022-03733-8 (SCI, IF:5.019)**.
3. **Shivansh Mishra**, Shashank Sheshar Singh, Ajay Kumar, and Bhaskar Biswas, "MNERLP-MUL: Merged node and edge relevance based link prediction in multiplex networks", in *Journal of Computational Science*, Volume 60, April 2022, ISSN: 1877-7503, **DOI:10.1016/j.jocs.2022.101606 (SCI, IF:3.817)**.

4. **Shivansh Mishra**, Shashank Sheshar Singh, Ajay Kumar, and Bhaskar Biswas, "CLP-MUL: Clustering-based Link Prediction in Multiplex Networks" (Under Review)

Co-Author Publications

1. Mukesh Kumar, **Shivansh Mishra**, and Bhaskar Biswas, "PQKLP: Projected Quantum Kernel based Link prediction in Dynamic Networks", in *Computer Communications*, Volume 196, December 2022, ISSN: 0140-3664, **DOI:10.1016/j.comcom.2022.10.006 (SCI, IF:5.047)**.
2. Mukesh Kumar, **Shivansh Mishra**, and Bhaskar Biswas, "PWF: Path Weight Aggregation Feature for link prediction in dynamic networks", in *Computer Communications*, Volume 191, July 2022, ISSN: 0140-3664, **DOI:10.1016/j.comcom.2022.05.019 (SCI, IF:5.047)**.
3. Mukesh Kumar, **Shivansh Mishra**, and Bhaskar Biswas, "CFLP: A new cost based feature for link prediction in dynamic networks", in *Journal of Computational Science*, Volume 62, July 2022, ISSN: 1877-7503, **DOI:10.1016/j.jocs.2022.101726 (SCI, IF:3.817)**.
4. Mukesh Kumar, **Shivansh Mishra**, and Bhaskar Biswas, "Features fusion based link prediction in dynamic networks", in *Journal of Computational Science*, Volume 57, January 2022, ISSN: 1877-7503, **DOI:10.1016/j.jocs.2021.101493 (SCI, IF:3.817)**.
5. Ajay Kumar, **Shivansh Mishra**, Shashank Sheshar Singh, Kuldeep Singh, and Bhaskar Biswas, "Link prediction in complex networks based on Significance of Higher-Order Path Index (SHOPI)", in *Physica A: Statistical Mechanics and its Applications*, Volume 545, May 2020, ISSN: 0378-4371, **DOI:10.1016/j.physa.2019.123790 (SCI, IF:3.778)**.

6. Shashank Sheshar Singh, **Shivansh Mishra**, Ajay Kumar, and Bhaskar Biswas, "CLP-ID: Community-based link prediction using information diffusion", in *Information Sciences*, Volume 514, April 2020, ISSN: 0020-0255, **DOI:10.1016/j.ins.2019.11.026 (SCI, IF:8.233)**.

Book Chapters

1. Shashank Sheshar Singh, **Shivansh Mishra**, Ajay Kumar, and Bhaskar Biswas, "Link Prediction on Social Networks Based on Centrality Measures", in *Principles of Social Networking: The New Horizon and Emerging Challenges*, Springer Singapore, pp. 71–89, 2022, **DOI:10.1007/978-981-16-3398-0_4**.