## Bibliography

- [1] Cisco annual internet report (2018-2023) white paper. https://www. cisco.com/c/en/us/solutions/collateral/executive-perspectives/ annual-internet-report/white-paper-c11-741490,2020.
- [2] Graduation project: Achievable rate analysis for swipt (simultaneous wireless information and power transfer) system. https://www.sps.tue.nl/ ictlab/vacancy/SWIPT/.
- [3] Lingo software. https://www.lindo.com/index.php/.
- [4] Matlab software. https://in.mathworks.com/products/matlab.html.
- [5] Mobile data traffic outlook. https://www.ericsson.com/ en/reports-and-papers/mobility-report/dataforecasts/ mobile-traffic-forecast,lastaccessed20thMay,2022.
- [6] Ahmed, E., Gani, A., Abolfazli, S., Yao, L. J., and Khan, S. U. Channel assignment algorithms in cognitive radio networks: taxonomy, open issues, and challenges. *IEEE Communications Surveys and Tutorials*, 18(1):795– 823, 2016.
- [7] Akyildiz, I. F., LeeKaushik, W.-Y., and Chowdhury, R. Crahns: Cognitive radio ad hoc networks. *Ad Hoc Networks, Elsevier*, 7(5):810–836, 2009.
- [8] Akyildiz, I. F., Lee, W. Y., Vuran, M. C., and Mohanty, S. Next generation/dynamic spectrum access/cognitive radio wireless networks: A survey. *Computer Networks Journal*, 60(13):2127–2159, 2006.
- [9] Alhashimi, H. F., Hindia, M. N., Dimyati, K., Hanafi, E. B., Safie, N., Qamar, F., Azrin, K., and Nguyen, Q. N. A survey on resource management for 6g heterogeneous networks: Current research, future trends, and challenges. *Electronics*, 12(3):647, 2023.
- [10] Alvi, S. A., Hussain, R., Shakeel, A., Javed, M. A., Hasan, Q. U., Lee, B. M., and Malik, S. A. Qos-oriented optimal relay selection in cognitive

radio networks. Wireless Communications and Mobile Computing, 2021:1–15, 2021.

- [11] Asad Ali, E. S., Shahzad, G., and Aziz Umrani, F. End to end latency incurred in cooperative communication system. In 2019 21st International Conference on Advanced Communication Technology (ICACT), pages 21–25, 2019.
- [12] Ashraf, N., Sheikh, S. A., Khan, S. A., Shayea, I., and Jalal, M. Simultaneous wireless information and power transfer with cooperative relaying for next-generation wireless networks: A review. *IEEE Access*, 9:71482–71504, 2021.
- [13] Asif, A. R., Zahra, F., and Matin, M. A. Cognitive solution for iot communication technologies-emphasis on 5g. *Journal of Electrical Engineering*, 71(2):131–137, 2020.
- [14] Aziz, H., Biro, P., Gaspers, S., d. Haan, R., Mattei, N., and Rastegari, B. Stable matching with uncertain linear preferences. *Algorithmica*, 82(5):1410– 1433, 2020.
- [15] Aziz, H. and Brandl, F. Existence of stability in hedonic coalition formation games. arXiv preprint arXiv:1201.4754, 2012.
- [16] Banerjee, S., Konishi, H., and Sönmez, T. Core in a simple coalition formation game. Social Choice and Welfare, 18(1):135–153, 2001.
- [17] Biglieri, E., Calderbank, R., Constantinides, A., Goldsmith, A., Paulraj, A., and Poor, H. V. MIMO Wireless Communications. Cambridge University Press, USA, 2010.
- [18] Biglieri, E., Goldsmith, A. J., Greenstein, L. J., Poor, H. V., and Mandayam, N. B. *Principles of cognitive radio*. Cambridge University Press, 2013.
- [19] Bogomolnaia, A. and Jackson, M. O. The stability of hedonic coalition structures. *Games and Economic Behavior*, 38(2):201–230, 2002.
- [20] Brandt, F., Bullinger, M., and Wilczynski, A. Reaching individually stable coalition structures in hedonic games. In *Proceedings of the AAAI Conference on Artificial Intelligence*, volume 35, pages 5211–5218, 2021.
- [21] Brandt, F., Conitzer, V., Endriss, U., Lang, J., and Procaccia, A. D. Handbook of computational social choice. Cambridge University Press, 2016.

- [22] Cechlrov, K. and Manlove, D. F. The exchange-stable marriage problem. Discrete Applied Mathematics, 152(1):109–122, 2005.
- [23] Chang, M.-K., Mei, Y.-J., Chan, Y.-W., Wu, M.-Y., and Chen, W.-R. Matching game-based hierarchical spectrum sharing in cooperative cognitive radio networks. *The Journal of Supercomputing*, 76(8):6195–6218, 2020.
- [24] Chen, J., Lv, L., Liu, Y., Kuo, Y., and Ren, C. Energy efficient relay selection and power allocation for cooperative cognitive radio networks. *IET Communications*, 9(13):1661–1668, 2015.
- [25] Chen, J., Lv, L., Liu, Y., Kuo, Y., and Ren, C. Energy efficient relay selection and power allocation for cooperative cognitive radio networks. *IET Communications*, 9(13):1661–1668, 2015.
- [26] Chen, X., Chen, H.-H., and Meng, W. Cooperative communications for cognitive radio networks—from theory to applications. *IEEE Communications* Surveys & Tutorials, 16(3):1180–1192, 2014.
- [27] Chen, Y., Huang, H., Zhang, Z., Qiu, P., and Lau, V. K. Cooperative spectrum access for cognitive radio network employing rateless code. In *ICC Workshops-2008 IEEE International Conference on Communications* Workshops, pages 326–331. IEEE, 2008.
- [28] Christian, J. An np-hardness result for nonlinear systems. *Reliable Com*puting, 4:345–350, 1998.
- [29] Cordeiro, C., Challapali, K., Birru, D., and Shankar, S. Ieee 802.22: the first worldwide wireless standard based on cognitive radios. In *First IEEE International Symposium on New Frontiers in Dynamic Spectrum Access Networks, 2005. DySPAN 2005.*, pages 328–337. IEEE, 2005.
- [30] Doi, H., Shioyama, T., Fujikawa, F., and Serizawa, Y. Study on delay time evaluation for carrier relay system using ip communications technology. *Journal of International Council on Electrical Engineering*, 3(3):234–239, 2013.
- [31] Dong, Y., Hossain, M. J., and Cheng, J. Performance of wireless powered amplify and forward relaying over nakagami-*m* fading channels with nonlinear energy harvester. *IEEE Communications Letters*, 20(4):672–675, 2016.
- [32] Dong, Z., Wang, X., Dau, S. H., and Yuen, C. Delay minimization for relaybased cooperative data exchange with network coding. In 2013 IEEE 78th Vehicular Technology Conference (VTC Fall), pages 1–5, 2013.

- [33] Drèze, J. H. and Greenberg., J. Hedonic coalitions: Optimality and stability. *Econometrica*, 48(4):987–1003, 1980.
- [34] Du, K., Xie, X., Shi, Z., and Li, M. Joint time and power control of energy harvesting crn based on ppo. In 2022 Wireless Telecommunications Symposium (WTS), pages 1–6, 2022.
- [35] Elmahdy, A. M., El-Keyi, A., ElBatt, T., and Seddik, K. G. Optimizing cooperative cognitive radio networks performance with primary qos provisioning. *IEEE Transactions on Communications*, 65(4):1451–1463, 2016.
- [36] FCC. Et docket no 02-135, spectrum policy task force report, 2002. 2002.
- [37] FCC. Fcc allocation file history. Federal communications commission office of engineering and technology policy and rules division, pages 1–51, 2021.
- [38] FCC. Fcc online table of frequency allocations. Federal communications commission office of engineering and technology policy and rules division, 2021, pages 1–173, 2021.
- [39] Feldman, M., Lewin-Eytan, L., and Naor, J. Hedonic clustering games. ACM Transactions on Parallel Computing (TOPC), 2(1):1–48, 2015.
- [40] Feng, X., Sun, G., Gan, X., Yang, F., Tian, X., Wang, X., and Guizani, M. Cooperative spectrum sharing in cognitive radio networks: A distributed matching approach. *IEEE Transactions on Communications*, 62(8):2651– 2664, 2014.
- [41] Forecasts, M. T. Forecasts 2010-2020. In UMTS Forum, 2011.
- [42] Gaganov, A. A. Computation complexity of the range of a polynomial in several variables. *Cybernetics*, 21:418–421, 1985.
- [43] Gale, D. and Shapley, L. S. College admissions and the stability of marriage. The American Mathematical Monthly, 69(1):9–15, 1962.
- [44] Gao, L., Duan, L., and Huang, J. Two-sided matching based cooperative spectrum sharing. *IEEE Transactions on Mobile Computing*, 16(2):538–551, 2017.
- [45] Ghosh, S., Acharya, T., and Maity, S. P. On outage minimization in rf energy harvesting relay assisted bidirectional communication. *Wireless Networks*, 25:3867–3881, 2019.

- [46] Goldsmith, A., Jafar, S. A., Maric, I., and Srinivasa, S. Breaking spectrum gridlock with cognitive radios: An information theoretic perspective. *Proceedings of the IEEE*, 97(5):894–914, 2009.
- [47] Gu, Y., Saad, W., Bennis, M., Debbah, M., and Han, Z. Matching theory for future wireless networks: fundamentals and applications. *IEEE Communications Magazine*, 53(5):52–59, 2015.
- [48] Hasan, M. K., Chowdhury, M. M. J., Ahmed, S., Sabuj, S. R., Nibhen, J., and Bakar, K. A. A. Optimum energy harvesting model for bidirectional cognitive radio networks. *EURASIP Journal on Wireless Communications* and Networking, 2021(199):2–23, 2021.
- [49] Haykin, S. Cognitive radio: brain-empowered wireless communications. *IEEE Journal on Selected Areas in Communications*, 23(2):201–220, 2005.
- [50] He, J., Guo, S., Pan, G., Yang, Y., and Liu, D. Relay cooperation and outage analysis in cognitive radio networks with energy harvesting. *IEEE Systems Journal*, 12(3):2129–2140, 2018.
- [51] Hindia, M. N., Qamar, F., Ojukwu, H., Dimyati, K., Al-Samman, A. M., and Amiri, I. S. On platform to enable the cognitive radio over 5g networks. *Wireless Personal Communications*, 113:1241–1262, 2020.
- [52] Hochbaum, D. S. Complexity and algorithms for nonlinear optimization problems. Annals of Operations Research, 153:257–296, 2007.
- [53] Hu, G., Cai, Y., Ao, L., and Wang, X. Joint design of beamforming and time switching/power splitting for wireless-powered multi-antenna dual-relay network. EURASIP Journal on Wireless Communications and Networking, 2019(246):2–16, 2019.
- [54] Huang, H., Shi, Y., Liang, L., He, J., and Zhang, X. Performance analysis of overlay cognitive noma network with imperfect sic and imperfect csi. *Physical Communication*, 53:101711, 2022.
- [55] Irving, R. W., Leather, P., and Gusfield, D. An efficient algorithm for the "optimal" stable marriage. *Journal of the ACM (JACM)*, 34(3):532–543, 1987.
- [56] Jain, R. Throughput fairness index : An explanation. 1999.
- [57] Jia, J., Zhang, J., and Zhang, Q. Cooperative relay for cognitive radio networks. In *IEEE INFOCOM 2009*, pages 2304–2312. IEEE, 2009.

- [58] Jin, S., Wang, X., Li, Z., and Wong, K. K. Zero-forcing beamforming in massive mimo systems with time-shifted pilots. 2014 IEEE International Conference on Communications (ICC), pages 4801–4806, Sydney, NSW, Australia, June 2014.
- [59] Jorswieck, E. A. Stable matchings for resource allocation in wireless networks. In 2011 17th International Conference on Digital Signal Processing (DSP), pages 1–8. IEEE, 2011.
- [60] Kandeepan, S., Saradhi, C. V., Filo, M., and Piesiewicz, R. Delay analysis of cooperative communication with opportunistic relay access. In 2011 IEEE 73rd Vehicular Technology Conference (VTC Spring), pages 1–5, 2011.
- [61] Kelso, A. S. and Crawford, V. P. Job matching, coalition formation, and gross substitutes. *Econometrica*, 50(6):1483–1504, 1982.
- [62] Khaledi, M. and Abouzeid, A. A. Auction-based spectrum sharing in cognitive radio networks with heterogeneous channels. In 2013 Information Theory and Applications Workshop (ITA), pages 1–8. IEEE, 2013.
- [63] Khan, A. A., Rehmani, M. H., and Rachedi, A. Cognitive-radio-based internet of things: Applications, architectures, spectrum related functionalities, and future research directions. *IEEE Wireless Communications*, 24(3):17– 25, 2017.
- [64] Khan, A. A., Rehmani, M. H., and Rachedi, A. Cognitive-radio-based internet of things: Applications, architectures, spectrum related functionalities, and future research directions. *IEEE wireless communications*, 24(3):17–25, 2017.
- [65] Khan, U. U., Dilshad, N., Rehmani, M. H., and Umer, T. Fairness in cognitive radio retworks: Models, measurement methods, applications, and future research directions. *Journal of Network and Computer Applications*, 73:12–26, 2016.
- [66] Konishi, H. and Ünver, M. U. Credible group stability in many-to-many matching problems. Journal of Economic Theory, 129(1):57–80, 2006.
- [67] Krikidis, I., Timotheou, S., Nikolaou, S., Zheng, G., Ng, D. W. K., and Schober, R. Simultaneous wireless information and power transfer in modern communication systems. *IEEE Communications Magazine*, 52(11):104–110, 2014.

- [68] Krikidis, I., Timotheou, S., Nikolaou, S., Zheng, G., Ng, D. W. K., and Schober, R. Simultaneous wireless information and power transfer in modern communication systems. *IEEE Communications Magazine*, 52(11):104–110, 2014.
- [69] Kumar, B., Dhurandher, S. K., and Woungang, I. A survey of overlay and underlay paradigms in cognitive radio networks. *International Journal of Communication Systems*, 31(2):1–20, 2012.
- [70] Laneman, J. N., Tse, D. N. C., and Wornell, G. W. Cooperative diversity in wireless networks: Efficient protocols and outage behavior. *IEEE Transaction on Information Theory*, 50(12):3062–3080, 2004.
- [71] Leshem, A. and Zehavi, E. Stable matching for channel access control in cognitive radio systems. pages 470–475, 06 2010.
- [72] Letaief, K. B. and Zhang, W. Cooperative communications for cognitive radio networks. *Proceedings of the IEEE*, 97(5):878–893, 2009.
- [73] Levin, G. and Loyka, S. Amplify-and-forward versus decode-and-forward relaying: Which is better? In 22th International Zurich seminar on communications (IZS). Eidgenössische Technische Hochschule Zürich, 2012.
- [74] Liang, W., Ng, S. X., and Hanzo, L. Cooperative communication between cognitive and primary users. *IET Communications*, 7(17):1982–1992, 2013.
- [75] Liang, W., Ng, S. X., and Hanzo, L. Cooperative overlay spectrum access in cognitive radio networks. *IEEE Communications Surveys & Tutorials*, 19(3):1924–1944, 2017.
- [76] LIU, B., PENG, M., and ZHOU, Z. Recent advances of simultaneous wireless information and power transfer in cellular networks. *ZTE Communications*, 16(1):26, 2018.
- [77] Liu, H., Hua, S., Zhuo, X., Chen, D., and Cheng, X. Cooperative spectrum sharing of multiple primary users and multiple secondary users. *Digital Communications and Networks*, 2(4):191–195, 2016.
- [78] Liu, W., Zhou, X., Durrani, S., and Popovski, P. Swipt with practical modulation and rf energy harvesting sensitivity. In 2016 IEEE International Conference on Communications (ICC), pages 1–7. IEEE, 2016.
- [79] Liu, Y., Qin, X., Huang, Y., Tang, L., and Fu, J. Maximizing energy efficiency in hybrid overlay-underlay cognitive radio networks based on energy harvesting-cooperative spectrum sensing. *Energies*, 15(8):2803, 2022.

- [80] Lo, B. F. A survey of common control channel design in cognitive radio networks. *Physical Communication*, 4(1):26–39, 2011.
- [81] Lu, X., Wang, P., Niyato, D., and Hossain, E. Dynamic spectrum access in cognitive radio networks with rf energy harvesting. *IEEE Wireless Communications*, 21(3):102–110, 2014.
- [82] Maharjan, S., Zhang, Y., and Gjessing, S. Economic approaches for cognitive radio networks: A survey. Wireless Personal Communications, 57:33–51, 2011.
- [83] Manna, R., Louie, R. H., Li, Y., and Vucetic, B. Cooperative spectrum sharing in cognitive radio networks with multiple antennas. *IEEE Transactions* on Signal Processing, 59(11):5509–5522, 2011.
- [84] Mitola, J. and Maguire, G. Cognitive radio: making software radios more personal. *IEEE Personal Communications*, 6(4):13–18, 1999.
- [85] Namvar, N. and Afghah, F. Spectrum sharing in cooperative cognitive radio networks: A matching game framework. In 2015 49th Annual Conference on Information Sciences and Systems (CISS), pages 1–5, Princeton, NJ, USA, 2015.
- [86] Ng, D. W. K., Lo, E. S., and Schober, R. Wireless information and power transfer: Energy efficiency optimization in ofdma systems. *IEEE Transactions on Wireless Communications*, 12(12):6352–6370, 2013.
- [87] Ng, T. C.-Y. and Yu, W. Joint optimization of relay strategies and resource allocations in cooperative cellular networks. *IEEE Journal on Selected areas* in Communications, 25(2):328–339, 2007.
- [88] Nosratinia, A., Hunter, T., and Hedayat, A. Cooperative communication in wireless networks. *IEEE Communications Magazine*, 42(10):74–80, 2004.
- [89] Nosratinia, A., Hunter, T. E., and Hedayat, A. Cooperative communication in wireless networks. *IEEE Communications Magazine*, 42(10):74–80, 2004.
- [90] Pandit, S. and Singh, G. An overview of spectrum sharing techniques in cognitive radio communication system. Wireless Networks, 23:497–518, 2017.
- [91] Pawelczak, P., Prasad, R. V., Xia, L., and Niemegeers, I. G. Cognitive radio emergency networks-requirements and design. In *First IEEE International Symposium on New Frontiers in Dynamic Spectrum Access Networks, 2005. DySPAN 2005.*, pages 601–606. IEEE, 2005.

- [92] Phunchongharn, P., Hossain, E., Niyato, D., and Camorlinga, S. A cognitive radio system for e-health applications in a hospital environment. *IEEE Wireless Communications*, 17(1):20–28, 2010.
- [93] Prathima, A., Gurjar, D. S., Jiang, Y., and Yadav, S. Wireless powered cognitive radio networks with multiple antenna sources and hardware impairments. *Physical Communication*, 55:1–38, 2022.
- [94] Rahim, M., Alfakeeh, A. S., Hussain, R., Javed, M. A., Shakeel, A., ul Hasan, Q., Israr, A., Alsayed, A. O., and Malik, S. A. Efficient channel allocation using matching theory for qos provisioning in cognitive radio networks. *Sensors*, 20(7):1872, 2020.
- [95] Raziah, I., Yunida, Y., Away, Y., Muharar, R., and Nasaruddin, N. Adaptive relay selection based on channel gain and link distance for cooperative outband device-to-device networks. *Heliyon*, 7(7), 2021.
- [96] Roumeliotis, A. J., Vassaki, S., and Panagopoulos, A. D. Overlay cognitive radio networks: A distributed matching scheme for user pairing. In 2015 International Wireless Communications and Mobile Computing Conference (IWCMC), pages 172–177, Dubrovnik, Croatia, 2015.
- [97] Roumeliotis, A. J., Vassaki, S., and Panagopoulos, A. D. Qos-driven power and time allocation scheme for spectrum leasing in overlay cognitive radio networks. *IET Communications*, 12:688–695, April 2018.
- [98] Salameh, H. A. B., Krunz, M., and Younis, O. Cooperative adaptive spectrum sharing in cognitive radio networks. *IEEE/ACM Transactions On Networking*, 18(4):1181–1194, 2010.
- [99] Schultz, D. C., Pabst, R., and Walke, B. Analytical estimation of packet delays in relay-based imt-advanced networks. In VTC Spring 2008 - IEEE Vehicular Technology Conference, pages 2411–2415, 2008.
- [100] Sharma, S., Shi, Y., Hou, Y. T., and Kompella, S. An optimal algorithm for relay node assignment in cooperative ad hoc networks. *IEEE/ACM Transactions on Networking*, 19(3):879–892, 2011.
- [101] Simeone, O., Bar-Ness, Y., and Spagnolini, U. Stable throughput of cognitive radios with and without relaying capability. *IEEE Transactions on Communications*, 55(12):2351–2360, 2007.

- [102] Simeone, O., Gambini, J., Bar-Ness, Y., and Spagnolini, U. Cooperation and cognitive radio. In 2007 IEEE International Conference on Communications, pages 6511–6515. IEEE, 2007.
- [103] Singh, C. K., Singh, V., Upadhyay, P. K., and Lin, M. Energy harvesting in overlay cognitive noma systems with hardware impairments. *IEEE Systems Journal*, 16(2):2648–2659, 2021.
- [104] Singh, K. D., Rawat, P., and Bonnin, J.-M. Cognitive radio for vehicular ad hoc networks (cr-vanets): approaches and challenges. *EURASIP Journal* on Wireless Communications and Networking, 2014:1–22, 2014.
- [105] Sofia, D. S. and Edward, A. S. Auction based game theory in cognitive radio networks for dynamic spectrum allocation. *Computers & Electrical Engineering*, 86:106734, 2020.
- [106] Spencer, Q. H., Swindlehurst, A. L., and Haardt, M. Zero-forcing methods for downlink spatial multiplexing in multiuser mimo channels. *IEEE Transactions on Signal Processing*, 52(2):461–471, 2004.
- [107] Stevenson, C. R., Chouinard, G., Lei, Z., Hu, W., Shellhammer, S. J., and Caldwell, W. Ieee 802.22: The first cognitive radio wireless regional area network standard. *IEEE Communications Magazine*, 47(1):130–138, 2009.
- [108] Su, W., Matyjas, J. D., and Batalama, S. Active cooperation between primary users and cognitive radio users in heterogeneous ad-hoc networks. *IEEE Transaction on Signal Processing*, 60(4):1796–1805, 2012.
- [109] Suchański, M., Kaniewski, P., Romanik, J., Golan, E., and Zubel, K. Radio environment maps for military cognitive networks: density of small-scale sensor network vs. map quality. *EURASIP Journal on Wireless Communications and Networking*, 2020:1–20, 2020.
- [110] Sylla, T., Mendiboure, L., Maaloul, S., Aniss, H., Chalouf, M. A., and Delbruel, S. Multi-connectivity for 5g networks and beyond: A survey. *Sensors*, 22(19):7591, 2022.
- [111] Tian, J., Xiao, H., Sun, Y., Hou, D., and Li, X. Energy efficiency optimization-based resource allocation for underlay rf-crn with residual energy and qos guarantee. *EURASIP Journal on Wireless Communications* and Networking, 2020(216):2–18, 2020.

- [112] Vasile, M. On the solution of min-max problems in robust optimization. In The EVOLVE 2014 International Conference, A Bridge between Probability, Set Oriented Numerics, and Evolutionary Computing, 2014.
- [113] Vassaki, S., Poulakis, M. I., and Panagopoulos, A. D. Spectrum leasing in cognitive radio networks: A matching theory approach. In 2015 IEEE 81st Vehicular Technology Conference (VTC Spring), pages 1–5. IEEE, 2015.
- [114] Wang, B., Han, Z., and Liu, K. J. R. Distributed relay selection and power control for multiuser cooperative communication networks using stackelberg game. *IEEE Transactions on Mobile Computing*, 8(7):975–990, 2009.
- [115] Wang, B., Wu, Y., and Liu, K. R. Game theory for cognitive radio networks: An overview. *Computer networks*, 54(14):2537–2561, 2010.
- [116] Wang, D. Simultaneous Wireless Information and Power Transfer (SWIPT) in Cooperative Networks. PhD thesis, Colorado State University, 2019.
- [117] Wang, H., Gao, L., Gan, X., Wang, X., and Hossain, E. Cooperative spectrum sharing in cognitive radio networks: A game-theoretic approach. In 2010 IEEE International Conference on Communications, pages 1–5. IEEE, 2010.
- [118] Wang, H., Gao, L., Gan, X., Wang, X., and Hossain, E. Cooperative spectrum sharing in cognitive radio networks: A game-theoretic approach. In 2010 IEEE International Conference on Communications, pages 1–5. IEEE, 2010.
- [119] Wang, Z., Chen, Z., Xia, B., Luo, L., and Zhou, J. Cognitive relay networks with energy harvesting and information transfer: Design, analysis, and optimization. *IEEE Transactions on Wireless Communications*, 15(4):2562– 2576, 2016.
- [120] Xu, T., Li, Z., Ge, J., and Ding, H. A survey on spectrum sharing in cognitive radio networks. *Ksii Transactions on Internet & Information Systems*, 8(11), 2014.
- [121] Xu, W., Yang, Zheng, D. Z., Lin, W., and Fan, P. Wireless information and power transfer in two-way relaying network with non-coherent differential modulation. *EURASIP Journal on Wireless Communications and Networking*, 2015(131):2–10, 2015.

- [122] Yan, F., Zhao, J., Qu, H., and Xu, X. Energy-efficient resource allocation in relay-aided orthogonal frequency division multiplexing cognitive radio networks with quality of service provisioning. *International Journal of Communication Systems*, 33(16):4566, 2020.
- [123] Yi, N., Ma, Y., and Tafazolli, R. Underlay cognitive radio with full or partial channel quality information. *International Journal of Navigation* and Observation, 2010(1):105723, 2010.
- [124] Yu, M. and Li, J. Is amplify-and-forward practically better than decode-andforward or vice versa? In *Proceedings.(ICASSP'05). IEEE International Conference on Acoustics, Speech, and Signal Processing, 2005.*, volume 3, pages iii–365. IEEE, 2005.
- [125] Zhang, Q., Jia, J., and Zhang, J. Cooperative relay to improve diversity in cognitive radio networks. *IEEE Communications Magazine*, 47(2):111–117, 2009.
- [126] Zhang, R. and Ho, C. K. Mimo broadcasting for simultaneous wireless information and power transfer. *IEEE Transactions on Wireless Communications*, 12(5):1989–2001, 2013.
- [127] Zhang, X., Zhang, B., An, K., Chen, Z., and Guo, D. Auction-based secondary relay selection on overlay spectrum sharing in hybrid satellite– terrestrial sensor networks. *Sensors*, 19(22):5039, 2019.
- [128] Zhang, Y. Dynamic spectrum access in cognitive radio wireless networks. In 2008 IEEE International Conference on Communications, pages 4927–4932. IEEE, 2008.
- [129] Zhao, Q. and Sadler, B. A survey of dynamic spectrum access: signal processing, networking, and regulatory policy. ieee signal process. Mag. Spec. Issue Resour. Constrained Signal Process. Commun. Netw. (May 2007), 2007.
- [130] Zhao, Q. and Swami, A. A survey of dynamic spectrum access: Signal processing and networking perspectives. In 2007 IEEE International Conference on Acoustics, Speech and Signal Processing-ICASSP'07, volume 4, pages 1349–1352. IEEE, 2007.
- [131] Zhengfeng, X., Pingyi, F., Hong-Chuan, Y., Xiong, K., Ming, L., and Yi, S. Optimal beamforming for mimo decode-and-forward relay channels. In 2012 IEEE Global Communications Conference (GLOBECOM), pages 4548–4553, Anaheim, CA, USA, 2012.

[132] Zhou, X., Zhang, R., and Ho, C. K. Wireless information and power transfer: Architecture design and rate-energy tradeoff. *IEEE Transactions on Communications*, 61(11):4754–4767, 2013.

# Publications based on the Thesis Works

### Journals

- M. Sharma, N. Sarma, "Utility Aware Cooperative Spectrum Sharing in Overlay Cognitive Radio Networks", Int. J. Wireless Information Networks, Springer, Vol. 29, pp 503–520, 2022.
- M. Sharma, N. Sarma, "Multi-objective optimization for energy efficient Cooperative Communication in an Energy-Constrained Overlay Cognitive Radio Network", *Physical Communication, Elsevier*, Vol. 62, pp 102251, 2023.
- M. Sharma, N. Sarma, "Many-to-One matching based Cooperative-Partner Assignment in Overlay Cognitive Radio Networks", *Physical Communica*tion, Elsevier, Vol. 65, pp 102393, 2024.

## **Conferences/Book Chapters**

- M. Sharma, N. Sarma, "One-to-One Matching for Cooperative Resource Sharing and Communication in CRNs", in the proc. of International Conference on Computing Science (COMS2), pp 158-168, Communications in Computer and Information Science, Springer, Cham, Vol. 1604, July 2022.
- M. Sharma, N. Sarma, "Utility Driven Joint Time-and-Power Allocation in Energy-Harvesting Cognitive Radio Relay Network", in the proc. of International Conference on Distributed Computing and Intelligent Technology (ICDCIT), pp 3-7, Lecture Notes in Computer Science, Springer, Cham, Vol. 14501, January 2024.



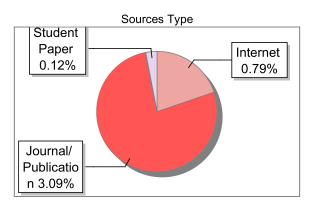
The Report is Generated by DrillBit Plagiarism Detection Software

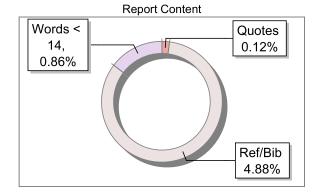
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