Bibliography

- [1] M. Mozaffari, W. Saad, M. Bennis, Y.-H. Nam and M. Debbah, "A Tutorial on UAVs for Wireless Networks: Applications, Challenges, and Open Problems," *IEEE Communications Surveys & Tutorials*, vol. 21, no. 3, pp. 2334-2360, Mar. 2019.
- [2] A. Sharma, P. Vanjani, N. Paliwal, C. M. W. Basnayaka, D. N. Jayakody, H.-C. Wang, and P. Muthuchidambaranathan, "Communication and networking technologies for UAVs: A survey," *Journal of Network and Computer Applications*, vol. 168, p. 102739, Oct. 2020.
- [3] K. L. Cook, "The silent force multiplier: the history and role of UAVs in warfare," in *Proc. IEEE Aerospace Conference*, Mar. 2007, pp. 1–7.
- [4] C. She et al., "A Tutorial on Ultrareliable and Low-Latency Communications in 6G: Integrating Domain Knowledge Into Deep Learning," in *Proceedings* of the IEEE, vol. 109, no. 3, pp. 204-246, Mar. 2021,
- [5] P. Popovski, K. F. Trillingsgaard, O. Simeone and G. Durisi, "5G Wireless Network Slicing for eMBB, URLLC, and mMTC: A Communication-Theoretic View," *IEEE Access*, vol. 6, pp. 55765-55779, Sep. 2018.
- [6] H. Hydher, D. N. K. Jayakody, K. T. Hemachandra, and T. Samarasinghe, "Intelligent UAV deployment for a disaster-resilient wireless network," Sensors, vol. 20, no. 21, p. 6140, Oct 2020.
- [7] D. N. K. Jayakody, T. D. P. Perera, A. Ghrayeb and M. O. Hasna, "Self-Energized UAV-Assisted Scheme for Cooperative Wireless Relay Networks," IEEE Transactions on Vehicular Technology, vol. 69, no. 1, pp. 578-592, Jan. 2020.

- [8] N. Zhao et al., "UAV-Assisted Emergency Networks in Disasters," *IEEE Wireless Communications*, vol. 26, no. 1, pp. 45-51, Feb. 2019.
- [9] D. Orfanus, E. P. de Freitas and F. Eliassen, "Self-Organization as a Supporting Paradigm for Military UAV Relay Networks," *IEEE Communications Letters*, vol. 20, no. 4, pp. 804-807, Apr. 2016,
- [10] C. Dragana, G. Stamatescu, L. Ichim and D. Popescu, "Interlinking unmanned aerial vehicles with wireless sensor networks for improved large area monitoring," in *Proc. 4th International Conference on Control, Decision and Information Technologies (CoDIT)*, 2017, pp. 0359-0364,
- [11] S. Kahveci, "Some cooperative relaying techniques for wireless communication systems," in *Proc. 22nd Signal Processing and Communications Applications Conference (SIU)*, 2014, pp. 1690-1693, doi: 10.1109/SIU.2014.6830573.
- [12] X. Lin, W. Mei and R. Zhang, "A New Store-Then-Amplify-and-Forward Protocol for UAV Mobile Relaying," *IEEE Wireless Communications Letters*, vol. 9, no. 5, pp. 591-595, May 2020.
- [13] W. Huang, J. Peng and H. Zhang, "User-Centric Intelligent UAV Swarm Networks: Performance Analysis and Design Insight," *IEEE Access*, vol. 7, pp. 181469-181478, Dec. 2019.
- [14] A. Al-Hourani, S. Kandeepan and S. Lardner, "Optimal LAP Altitude for Maximum Coverage," *IEEE Wireless Communications Letters*, vol. 3, no. 6, pp. 569-572, Dec. 2014.
- [15] M. Mozaffari, W. Saad, M. Bennis and M. Debbah, "Efficient Deployment of Multiple Unmanned Aerial Vehicles for Optimal Wireless Coverage," *IEEE Communications Letters*, vol. 20, no. 8, pp. 1647-1650, Aug. 2016.
- [16] M. Alzenad, A. El-Keyi, F. Lagum and H. Yanikomeroglu, "3-D Placement of an Unmanned Aerial Vehicle Base Station (UAV-BS) for Energy-Efficient Maximal Coverage," in *IEEE Wireless Communications Letters*, vol. 6, no. 4, pp. 434-437, Aug. 2017.
- [17] Xukai Zhong, "Deploying UAV Base Stations in Communication Network Using Machine Learning," Master of Engineering dissertation, Department

- of Electrical and Computer Engineering., Simon Fraser University., Burnaby, Canada, 2017. Accessed on: January 10, 2019. [Online]. Available: https://dspace.library.uvic.ca/handle/1828/11405.
- [18] M. J. Farooq and Q. Zhu, "A Multi-Layer Feedback System Approach to Resilient Connectivity of Remotely Deployed Mobile Internet of Things," *IEEE Transactions on Cognitive Communications and Networking*, vol. 4, no. 2, pp. 422-432, June 2018.
- [19] F. Jiang and A. L. Swindlehurst, "Optimization of UAV Heading for the Ground-to-Air Uplink," *IEEE Journal on Selected Areas in Communications*, vol. 30, no. 5, pp. 993-1005, June 2012.
- [20] J. Chen and D. Gesbert, "Optimal positioning of flying relays for wireless networks: A LOS map approach," in *Proc. IEEE International Conference on Communications (ICC)*, Paris, 2017, pp. 1-6.
- [21] Y. Li, G. Feng, M. Ghasemiahmadi and L. Cai, "Power Allocation and 3-D Placement for Floating Relay Supporting Indoor Communications," *IEEE Transactions on Mobile Computing*, vol. 18, no. 3, pp. 618-631, Mar. 2019.
- [22] H. Shakhatreh, A. Khreishah, A. Alsarhan, I. Khalil, A. Sawalmeh and N. S. Othman, "Efficient 3D placement of a UAV using particle swarm optimization," in *Proc. 8th International Conference on Information and Communication Systems (ICICS)*, Irbid, 2017, pp. 258-263.
- [23] J. Sánchez-García, D.G. Reina, S.L. Toral, A distributed PSO-based exploration algorithm for a UAV network assisting a disaster scenario, *Future Generation Computer Systems*, Volume 90, Pages 129-148, 2019.
- [24] D.G. Reina, T. Camp, A. Munjal, S.L. Toral, Evolutionary deployment and local search-based movements of 0th responders in disaster scenarios, *Future Generation Computer Systems*, Volume 88, Pages 61-78, 2018.
- [25] A. Chattopadhyay, A. Ghosh and A. Kumar, "Asynchronous Stochastic Approximation Based Learning Algorithms for As-You-Go Deployment of Wireless Relay Networks Along a Line," *IEEE Transactions on Mobile Computing*, vol. 17, no. 5, pp. 1004-1018, 1 May 2018.

- [26] J. Li and Y. Han, "Optimal Resource Allocation for Packet Delay Minimization in Multi-Layer UAV Networks," *IEEE Communications Letters*, vol. 21, no. 3, pp. 580-583, Mar. 2017.
- [27] H. El Hammouti, M. Benjillali, B. Shihada and M. Alouini, "Learn-As-You-Fly: A Distributed Algorithm for Joint 3D Placement and User Association in Multi-UAVs Networks," *IEEE Transactions on Wireless Communications*, vol. 18, no. 12, pp. 5831-5844, Dec. 2019.
- [28] B. Duo, Q. Wu, X. Yuan and R. Zhang, "Energy Efficiency Maximization for Full-Duplex UAV Secrecy Communication," *IEEE Transactions on Vehicular Technology*, vol. 69, no. 4, pp. 4590-4595, Apr. 2020.
- [29] S. Karimi-Bidhendi, J. Guo and H. Jafarkhani, "Energy-Efficient Node Deployment in Heterogeneous Two-Tier Wireless Sensor Networks With Limited Communication Range," *IEEE Transactions on Wireless Communications*, vol. 20, no. 1, pp. 40-55, Jan. 2021.
- [30] Y. Cai, Z. Wei, R. Li, D. W. Kwan Ng and J. Yuan, "Energy-Efficient Resource Allocation for Secure UAV Communication Systems," in *Proc. IEEE Wireless Communications and Networking Conference (WCNC)*, Marrakesh, Morocco, 2019, pp. 1-8.
- [31] Y. Wu, W. Yang, X. Guan and Q. Wu, "Energy-Efficient Trajectory Design for UAV-Enabled Communication Under Malicious Jamming," *IEEE Wireless Communications Letters*, vol. 10, no. 2, pp. 206-210, Feb. 2021.
- [32] L. Wang and S. Zhou, "Energy-Efficient UAV Deployment with Flexible Functional Split Selection," in *Proc. IEEE 19th International Workshop on Signal Processing Advances in Wireless Communications (SPAWC)*, Kalamata, Greece, 2018, pp. 1-5.
- [33] S. Ahmed, M. Z. Chowdhury and Y. M. Jang, "Energy-Efficient UAV Relaying Communications to Serve Ground Nodes," *IEEE Communications Letters*, vol. 24, no. 4, pp. 849-852, Apr. 2020.
- [34] V. Mayor, R. Estepa, A. Estepa, and G. Madinabeitia, "Energy-Efficient UAVs Deployment for QoS-Guaranteed VoWiFi Service," Sensors, 20(16), p.4455 2020.

- [35] S. Ahmed, M. Z. Chowdhury and Y. M. Jang, "Energy-Efficient UAV-to-User Scheduling to Maximize Throughput in Wireless Networks," *IEEE Access*, vol. 8, pp. 21215-21225, 2020.
- [36] A. Akarsu and T. Girici, "Fairness aware multiple drone base station deployment," *IET Communications*, 12(4), pp.425-431, 2018.
- [37] Yuanxin Cai, Zhiqiang Wei, Ruide Li, Derrick Wing Kwan Ng, Jinhong Yuan "Joint Trajectory and Resource Allocation Design for Energy-Efficient Secure UAV Communication Systems" available online arXiv:2003.07028, Mar 2020
- [38] M. Mozaffari, W. Saad, M. Bennis and M. Debbah, "Mobile Internet of Things: Can UAVs Provide an Energy-Efficient Mobile Architecture?," in Proc. IEEE Global Communications Conference (GLOBECOM), Washington, DC, USA, 2016, pp. 1-6.
- [39] H. Hu et al., "Optimization of Energy Utilization in Cognitive UAV Systems," *IEEE Sensors Journal*, vol. 21, no. 3, pp. 3933-3943, 1 Feb.1, 2021.
- [40] E. Koyuncu, "Power-Efficient Deployment of UAVs as Relays," in *Proc. IEEE 19th International Workshop on Signal Processing Advances in Wireless Communications (SPAWC)*, Kalamata, Greece, 2018, pp. 1-5.
- [41] L. Xiao, Y. Xu, D. Yang and Y. Zeng, "Secrecy Energy Efficiency Maximization for UAV-Enabled Mobile Relaying," *IEEE Transactions on Green Communications and Networking*, vol. 4, no. 1, pp. 180-193, Mar. 2020.
- [42] M. Hua, L. Yang, Q. Wu and A. L. Swindlehurst, "3D UAV Trajectory and Communication Design for Simultaneous Uplink and Downlink Transmission," *IEEE Transactions on Communications*, vol. 68, no. 9, pp. 5908-5923, Sept. 2020.
- [43] Weidong Mei, Qingqing Wu, Rui Zhang "Cellular-Connected UAV: Uplink Association, Power Control and Interference Coordination" available online arXiv:1807.08218, Jul 2018.
- [44] D. Yang, Q. Wu, Y. Zeng and R. Zhang, "Energy Tradeoff in Ground-to-UAV Communication via Trajectory Design," *IEEE Transactions on Vehicular Technology*, vol. 67, no. 7, pp. 6721-6726, July 2018.

- [45] A. Rahmati, S. Hosseinalipour, Y. Yapıcı, İ. Güvenç, H. Dai and A. Bhuyan, "Energy-Efficient Beamforming and Power Control for Uplink NOMA in mmWave UAV Networks," in *Proc.GLOBECOM IEEE Global Communi*cations Conference, Taipei, Taiwan, 2020, pp. 1-6.
- [46] H. Huang and A. V. Savkin, "A Method for Optimized Deployment of Unmanned Aerial Vehicles for Maximum Coverage and Minimum Interference in Cellular Networks," *IEEE Transactions on Industrial Informatics*, vol. 15, no. 5, pp. 2638-2647, May 2019.
- [47] N. Sharma, M. Magarini, D. N. K. Jayakody, V. Sharma and J. Li, "On-Demand Ultra-Dense Cloud Drone Networks: Opportunities, Challenges and Benefits," *IEEE Communications Magazine*, vol. 56, no. 8, pp. 85-91, August 2018.
- [48] H. Zhao, H. Liu, Y.-W. Leung and X. Chu, "Self-Adaptive Collective Motion of Swarm Robots," *IEEE Transactions on Automation Science and Engineer*ing, vol. 15, no. 4, pp. 1533-1545, Oct. 2018.
- [49] M. Delight, S. Ramakrishnan, T. Zambrano and T. MacCready, "Developing robotic swarms for ocean surface mapping," in *Proc. IEEE International Conference on Robotics and Automation (ICRA)*, 2016, pp. 5309-5315.
- [50] S. Moon, K. Yang, S. K. Gan and D. H. Shim, "Decentralized information-theoretic task assignment for searching and tracking of moving targets," in *Proc. International Conference on Unmanned Aircraft Systems (ICUAS)*, 2015, pp. 1031-1036.
- [51] H. Zhao, H. Wang, W. Wu and J. Wei, "Deployment Algorithms for UAV Airborne Networks Toward On-Demand Coverage," *IEEE Journal on Selected Areas in Communications*, vol. 36, no. 9, pp. 2015-2031, Sept. 2018.
- [52] Z. Wang, L. Duan and R. Zhang, "Adaptive Deployment for UAV-Aided Communication Networks," *IEEE Transactions on Wireless Communications*, vol. 18, no. 9, pp. 4531-4543, Sept. 2019.
- [53] E. Kalantari, I. Bor-Yaliniz, A. Yongacoglu and H. Yanikomeroglu, "User association and bandwidth allocation for terrestrial and aerial base stations

- with backhaul considerations," in *Proc. IEEE 28th Annual International Symposium on Personal, Indoor, and Mobile Radio Communications (PIMRC)*, 2017, pp. 1-6.
- [54] X. Zhang and L. Duan, "Fast Deployment of UAV Networks for Optimal Wireless Coverage," *IEEE Transactions on Mobile Computing*, vol. 18, no. 3, pp. 588-601, 1 March 2019.
- [55] M. Chen, M. Mozaffari, W. Saad, C. Yin, M. Debbah and C. S. Hong, "Caching in the Sky: Proactive Deployment of Cache-Enabled Unmanned Aerial Vehicles for Optimized Quality-of-Experience," *IEEE Journal on Selected Areas in Communications*, vol. 35, no. 5, pp. 1046-1061, May 2017.
- [56] R. Dutta, L. Sun and D. Pack, "A Decentralized Formation and Network Connectivity Tracking Controller for Multiple Unmanned Systems," *IEEE Transactions on Control Systems Technology*, vol. 26, no. 6, pp. 2206-2213, Nov. 2018.
- [57] R. Olfati-Saber and P. Jalalkamali, "Coupled Distributed Estimation and Control for Mobile Sensor Networks," *IEEE Transactions on Automatic Con*trol, vol. 57, no. 10, pp. 2609-2614, Oct. 2012.
- [58] I. Mahjri, A. Dhraief, A. Belghith and A. S. AlMogren, "SLIDE: A Straight Line Conflict Detection and Alerting Algorithm for Multiple Unmanned Aerial Vehicles," *IEEE Transactions on Mobile Computing*, vol. 17, no. 5, pp. 1190-1203, 1 May 2018.
- [59] S. Panic, T. D. P. Perera, D. N. K. Jayakody, C. Stefanovic and B. Prlince-vic, "UAV-assited Wireless Powered Sensor Network over Rician Shadowed Fading Channels," in Proc. IEEE International Conference on Microwaves, Antennas, Communications and Electronic Systems (COMCAS), 2019, pp. 1-5.
- [60] J. Kennedy and R. Eberhart, "Particle swarm optimization," in Proc. ICNN'95 - International Conference on Neural Networks, 1995, pp. 1942-1948 vol.4.
- [61] E. Kalantari, H. Yanikomeroglu and A. Yongacoglu, "On the Number and 3D Placement of Drone Base Stations in Wireless Cellular Networks," in Proc. IEEE 84th Vehicular Technology Conference (VTC-Fall), 2016, pp. 1-6.

- [62] M. Mozaffari, W. Saad, M. Bennis and M. Debbah, "Unmanned Aerial Vehicle With Underlaid Device-to-Device Communications: Performance and Tradeoffs," *IEEE Transactions on Wireless Communications*, vol. 15, no. 6, pp. 3949-3963, June 2016.
- [63] Y. Sun, Z. Ding and X. Dai, "A User-Centric Cooperative Scheme for UAV-Assisted Wireless Networks in Malfunction Areas," *IEEE Transactions on Communications*, vol. 67, no. 12, pp. 8786-8800, Dec. 2019.
- [64] H. Bayerlein, M. Theile, M. Caccamo and D. Gesbert, "UAV path planning for wireless data harvesting: A deep reinforcement learning approach", in *Proc. IEEE Global Commun. Conf. (GLOBECOM)*, pp. 1-6, 2020.
- [65] C. -L. Hu, S. -Z. Huang, Z. Zhang and L. Hui, "Energy-Balanced Optimization on Flying Ferry Placement for Data Gathering in Wireless Sensor Networks," *IEEE Access*, vol. 9, pp. 70906-70923, May 2021.
- [66] J. Li et al., "Joint Optimization on Trajectory, Altitude, Velocity, and Link Scheduling for Minimum Mission Time in UAV-Aided Data Collection," *IEEE Internet of Things Journal*, vol. 7, no. 2, pp. 1464-1475, Feb. 2020.
- [67] Y. Wang, Z. Hu, X. Wen, Z. Lu, and J. Miao, "Minimizing data collection time with collaborative UAVs in wireless sensor networks," *IEEE Access*, vol. 8, pp. 98 659–98 669, May 2020.
- [68] S. Alfattani, W. Jaafar, H. Yanikomeroglu, and A. Yongacoglu, "Multiuav data collection framework for wireless sensor networks," in *Proc. IEEE Glob. Commun. Conf.*, 2019, pp. 1–6.
- [69] O. Ghdiri, W. Jaafar, S. Alfattani, J. B. Abderrazak and H. Yanikomeroglu, "Energy-Efficient Multi-UAV Data Collection for IoT Networks with Time Deadlines," in *Proc. GLOBECOM 2020 - 2020 IEEE Global Communications Conference*, 2020, pp. 1-6.
- [70] C. Zhou et al., "Deep RL-based trajectory planning for AOI minimization in UAV-assisted IoT," in *Proc. IEEE 11th Int. Conf. Wireless Commun. Signal Process*, 2019, pp. 1–6.

- [71] C. M. W. Basnayaka, D. N. K. Jayakody and Z. Chang, "Age of Information Based URLLC-enabled UAV Wireless Communications System," *IEEE Internet of Things Journal*, doi: 10.1109/JIOT.2021.3123431.
- [72] O. Bouhamed, H. Ghazzai, H. Besbes and Y. Massoud, "A UAV-Assisted Data Collection for Wireless Sensor Networks: Autonomous Navigation and Scheduling," *IEEE Access*, vol. 8, pp. 110446-110460, Jun. 2020.
- [73] M. Ibrahim and H. Arslan, "Air-Ground Doppler-delay spread spectrum for dense scattering environments," in Proc. MILCOM 2015 - 2015 IEEE Military Communications Conference, 2015, pp. 1661-1666.
- [74] K. Daniel, M. Putzke, B. Dusza and C. Wietfeld, "Three dimensional channel characterization for low altitude aerial vehicles," in *Proc. 2010 7th Interna*tional Symposium on Wireless Communication Systems, 2010, pp. 756-760.
- [75] D. W. Matolak and R. Sun, "Air—Ground Channel Characterization for Unmanned Aircraft Systems—Part I: Methods, Measurements, and Models for Over-Water Settings," *IEEE Transactions on Vehicular Technology*, vol. 66, no. 1, pp. 26-44, Jan. 2017.
- [76] R. Amorim, H. Nguyen, P. Mogensen, I. Z. Kovács, J. Wigard and T. B. Sørensen, "Radio Channel Modeling for UAV Communication Over Cellular Networks," *IEEE Wireless Communications Letters*, vol. 6, no. 4, pp. 514-517, Aug. 2017.
- [77] Y. Liu, S. Xie and Y. Zhang, "Cooperative Offloading and Resource Management for UAV-Enabled Mobile Edge Computing in Power IoT System," IEEE Transactions on Vehicular Technology, vol. 69, no. 10, pp. 12229-12239, Oct. 2020.
- [78] F. Zhou, Y. Wu, R. Q. Hu and Y. Qian, "Computation Rate Maximization in UAV-Enabled Wireless-Powered Mobile-Edge Computing Systems," *IEEE Journal on Selected Areas in Communications*, vol. 36, no. 9, pp. 1927-1941, Sept. 2018.
- [79] Z. Hu, Z. Zheng, L. Song, T. Wang and X. Li, "UAV Offloading: Spectrum Trading Contract Design for UAV-Assisted Cellular Networks," *IEEE Trans*actions on Wireless Communications, vol. 17, no. 9, pp. 6093-6107, Sept. 2018.

- [80] 'Propagation data and prediction methods for the design of terrestrial broadband millimetric radio access systems', Geneva, Switzerland, Rec. P.1410-2, 2003, P Series, Radiowave Propagation.
- [81] A. Omran, L. Sboui, M. Kadoch, Z. Chang, J. Lu and R. Liu, "3D Deployment of Multiple UAVs for Emergent On-Demand Offloading," in *Proc.* 2020 International Wireless Communications and Mobile Computing (IWCMC), 2020, pp. 692-696.
- [82] H. Hydher, D.N.K. Jayakody, S.Panic, "Maximizing the latency fairness in UAV-assisted MEC system," *IET Intell. Transp. Syst.*, 1–11, 2021.
- [83] J. Liu and Q. Liu, "Speed and Resource Optimization of BFGS Quasi-Newton Implementation on FPGA Using Inexact Line Search Method for Neural Network Training," in Proc. International Conference on Field-Programmable Technology (FPT), 2018.
- [84] J. Zhang, "On the Non-monotone Armijo-type Line Search Algorithm," in *Proc. Third International Conference on Information and Computing*, 2010, pp. 308-311.
- [85] N. Krejić and N. Krklec, "Line search methods with variable sample size for unconstrained optimization," *Journal of Computational and Applied Mathe*matics, Volume 245, 2013, Pages 213-231, ISSN 0377-0427.
- [86] S. Sharma, Y. Shi, Y. T. Hou and S. Kompella, "An Optimal Algorithm for Relay Node Assignment in Cooperative Ad Hoc Networks," *IEEE/ACM Transactions on Networking*, vol. 19, no. 3, pp. 879-892, June 2011.
- [87] S. Chowdhury, "Matching theory for cognitive radio networks: An overview", *ICT Express*, vol. 5, no. 1, pp. 12-15, 2019.