References

[1] N. Lu, N. Cheng, N. Zhang, X. Shen, and J. W. Mark, "Connected vehicles: Solutions and challenges," *IEEE Internet of Things Journal*, vol. 1, no. 4, pp. 289 – 299, Aug. 2014.

[2] F. Bai and B. Krishnamachari, "Exploiting the wisdom of the crowd: localized, distributed information-centric VANETs," *IEEE Commun. Magazine*, vol. 48, no. 5, pp. 138 – 146, May 2010.

[3] T. H. Luan, X. S. Shen, and F. Bai, "Integrity-oriented content transmission in highway vehicular ad hoc networks," in *Proc. IEEE International Conference on Computer Commun.*, Apr. 2013, pp. 2562 – 2570.

[4] G. Karagiannis, O. Altintas, E. Ekici, G. Heijenk, B. Jarupan, K. Lin, and T. Weil, "Vehicular networking: A survey and tutorial on requirements, architectures, challenges, standards and solutions," *IEEE Commun. Surveys Tuts.*, vol. 13, no. 4, pp. 584 – 616, Jul. 2011.

[5] S. Zeadally, R. Hunt, Y.-S. Chen, A. Irwin, and A. Hassan, "Vehicular ad hoc networks VANETS: status, results, and challenges," *Telecommunication Systems*, vol. 50, no. 4, pp. 217 – 241, Aug. 2012.

[6] C. Olaverri-Monreal, P. Gomes, R. Fernandes, F. Vieira, and M. Ferreira, "The See-Through System: A VANET-enabled assistant for overtaking maneuvers," in *Proc. IEEE Intelligent Vehicles Symposium*, Jun. 2010, pp. 123 – 128.

[7] K.-Y. Ho, P.-C. Kang, C.-H. Hsu, and C.-H. Lin, "Implementation of WAVE/DSRC devices for vehicular communications," in *Proc. IEEE International Symposium on Computer Commun. Control and Automation*, May 2010, pp. 522 – 525.

[8] D. Jiang, V. Taliwal, A. Meier, W. Holfelder, and R. Herrtwich, "Design of 5.9 GHz DSRC-based vehicular safety communication," *IEEE Wireless Commun.*, vol. 13, no. 5, pp. 1536 – 1284, Nov. 2006.

[9] C. Satish, *Inter-vehicular communication for collision avoidance using Wi-Fi direct.* Thesis. Rochester Institute of Technology, 2014.

[10] A. Balasundram, T. Samarasinghe, and D. Dias, "Performance analysis of Wi-Fi Direct for vehicular ad-hoc networks," in *Proc. IEEE International Conference on Advanced Networks and Telecommunications Systems*, Nov. 2016, pp. 1 – 6.

[11] Michigan Department of Transportation, "Connected Vehicle Technology Industry Delphi Study," https://www.michigan.gov/documents/mdot/09-27-2012_Connected_Vehicle_Technology_-_Industry_Delphi_Study_401329_7.pdf, 2012.

[12] D. Jiang, V. Taliwal, A. Meier, W. Holfelder, and R. Herrtwich, "Device-to-device communications with Wi-Fi Direct: Overview and experimentation," *IEEE Wireless Commun.*, vol. 20, no. 3, pp. 96 – 104, Jun. 2013.

[13] H. Zhang, Y. Wang, and C. C. Tan, "WD2: An improved Wi-Fi Direct group formation protocol," in *Proc. ACM MobiCom Workshop on Challenged networks*, Sep. 2014, pp. 55 – 60.

[14] P. Angadi, *Increased Persistence of Wi-Fi Direct Networks for Smartphone-based Collision Avoidance.* Thesis. Rochester Institute of Technology, 2014.

[15] —, "OMNeT++ simulation manual, version 5.2," [online] https://www.omnetpp.org/doc/omnetpp/manual, 2016.

[16] S. Iskounen, T. M. T. Nguyen, and S. Monnet, "WiFi-Direct Simulation for INET in OMNeT++," *arXiv preprint arXiv:1609.04604*, 2016.

[17] —, "INET framework, version 3.5," [online] https://inet.omnetpp.org, 2016.

[18] Wi-Fi Alliance, "Wi-Fi Peer-to-Peer (P2P) Technical Specification, version 1.7," [online] https://www.wi-fi.org/discover-wi-fi/specifications, 2010.

[19] https://developer.android.com/training/connect-devices-wirelessly/wifi-direct.html, 2016.

[20] A. Varga, *OMNeT++ In Modeling and Tools for Network Simulation.* Springer-Verlag Berlin Heidelberg, 2010.

[21] C. Jin, J.-W. Choi, W.-S. Kang, and S. Yun, "Wi-Fi Direct data transmission for wireless medical devices," in *Proc. IEEE International Symposium on Consumer Electronics*, Jun. 2014, pp. 1 – 2.

[22] N. I. Shuhaimi, H. Heriansyah, T. Juhana, and A. Kurniawan, "Performance Analysis for Uniform and Binomial Distribution on Contention Window using DSRC and Wi-Fi Direct Standard," *International Journal of Electrical and Computer Engineering*, vol. 5, no. 6, pp. 1452 – 1457, Dec. 2015.

[23] W. Sun, C. Yang, S. Jin, and S. Choi, "Listen channel randomization for faster Wi-Fi direct device discovery," in *Proc. IEEE International Conference on Computer Commun.*, Apr. 2016, pp. 1 – 9.

[24] A. J. Monarrez, "Extending Wi-Fi Direct for automated operations," [online] https://calhoun.nps.edu/handle/10945/45229, 2015.

[25] M. I. Hassan, H. L. Vu, T. Sakurai, and L. L. Andrew, "Effect of retransmissions on the performance of the IEEE 802.11 MAC protocol for DSRC," *IEEE Trans. Veh. Technol.*, vol. 61, no. 1, pp. 22 – 34, Jan. 2012.

[26] J. Karedal, N. Czink, A. Paier, F. Tufvesson, and A. F. Molisch, "Path loss modeling for vehicle-to-vehicle communications," *IEEE Trans. Veh. Technol.*, vol. 60, no. 1, pp. 323 – 328, Jan. 2011.

[27] O. Onubogu, K. Ziri-Castro, D. Jayalath, K. Ansari, and H. Suzuki, "Empirical vehicle-to-vehicle pathloss modeling in highway, suburban and urban environments at 5.8 GHz," in *Proc. IEEE International Conference on Signal Processing and Commun. Systems*, Dec. 2014, pp. 1 – 6.

[28] M. Torrent-Moreno, F. Schmidt-Eisenlohr, H. Fussler, and H. Hartenstein, "Effects of a realistic channel model on packet forwarding in vehicular ad hoc networks," in *Proc. IEEE Wireless Commun. and Networking Conference*, Apr. 2006, pp. 385 – 391.

[29] P. Paschalidis, K. Mahler, A. Kortke, M. Peter, and W. Keusgen, "Pathloss and multipath power decay of the wideband car-to-car channel at 5.7 GHz," in *Proc. IEEE Vehicular Technology Conference*, May 2011, pp. 1 – 5.

[30] TG Road Safety, "Safe distance between vehicles," http://www.cedr.eu/download/Publications/2010/e_Distance_between_vehicles.pdf, 2010.

[31] A. F. Molisch, F. Tufvesson, J. Karedal, and C. F. Mecklenbrauker, "A survey on vehicle-to-vehicle propagation channels," *IEEE Wireless Commun.*, vol. 16, no. 6, pp. 12 – 22, Dec. 2009.

[32] H. Fernandez, L. Rubio, J. Reig, V. M. Rodrigo-Penarrocha, and A. Valero, "Path loss modeling for vehicular system performance and communication protocols evaluation," *Mobile Networks and Applications*, vol. 18, no. 6, pp. 755 – 765, Dec. 2013.

[33] H. Fernández, L. Rubio, V. M. Rodrigo-Peñarrocha, and J. Reig, "Path loss characterization for vehicular communications at 700 MHz and 5.9 GHz under LOS and NLOS conditions," *IEEE Antennas and Wireless Propagation Letters*, vol. 13, pp. 931 – 934, May 2014.

[34] M. Boban, T. T. Vinhoza, M. Ferreira, J. Barros, and O. K. Tonguz, "Impact of vehicles as obstacles in vehicular ad hoc networks," *IEEE Journal on Selected Areas in Commun.*, vol. 29, no. 1, pp. 15 – 28, Jan. 2011.

[35] A. Goldsmith, "Wireless communications," Cambridge university press, 2005.

[36] M. Torrent-Moreno, D. Jiang, and H. Hartenstein, "Broadcast reception rates and effects of priority access in 802.11-based vehicular ad-hoc networks," in *Proc. International Workshop on Vehicular Ad hoc Networks*, Oct. 2004, pp. 10 – 18.

[37] J. Yin, G. Holland, T. Elbatt, F. Bai, and H. Krishnan, "DSRC channel fading analysis from empirical measurement," in *Proc. IEEE International Conference on Commun. and Networking*, Oct. 2006, pp. 1 – 5.

[38] L. Rubio, J. Reig, and N. Cardona, "Evaluation of nakagami fading behaviour based on measurements in urban scenarios," *AEU-International Journal of Electronics and Commun.*, vol. 61, no. 2, pp. 135 – 138, Feb. 2007.

[39] V. Taliwal, D. Jiang, H. Mangold, C. Chen, and R. Sengupta, "Empirical determination of channel characteristics for DSRC vehicle-to-vehicle communication," in *Proc. ACM International Workshop on Vehicular ad hoc networks*, Oct. 2004, pp. 88 – 88.

[40] L. Rubio, N. Cardona, S. Flores, J. Reig, and L. Juan-Llacer, "The use of semi-deterministic propagation models for the prediction of the short-term

fading statistics in mobile channels," in *Proc. IEEE Vehicular Technology Conference*, Sep. 1999, pp. 1460 – 1464.

[41] P. Chatzimisios, V. Vitsas, and A. C. Boucouvalas, "Throughput and delay analysis of IEEE 802.11 protocol," in *Proc. International Workshop on Networked Appliances*, Oct. 2002, pp. 168 – 174.

[42] T. K. Mak, K. P. Laberteaux, and R. Sengupta, "A multi-channel VANET providing concurrent safety and commercial services," in *Proc. International Workshop on Vehicular Ad hoc Networks*, Oct. 2005, pp. 168 – 174.