- [1] Ahonen, S. and Eskelinen, P., "Mobile terminal location for UMTS," *IEEE Aerospace and Electronic Systems Magazine*, vol. 18, no. 2, pp. 23-27, 2003.
- [2] Akgul, F. O. and Pahlavan, K., "AOA assisted NLOS error mitigation for TOA-based indoor positioning systems," in *IEEE Military Communications Conference*, Orlando, USA, 2007, pp. 1-5.
- [3] Al-Jazzar, S. and Caffery Jr, J., "ML and Bayesian TOA location estimators for NLOS environments," in *IEEE 56th Vehicular Technology Conference*, Vancouver, Canada, 2002, pp. 1178-1181.
- [4] Bachrach, A., Garamifard, A., Gurdan, D., He, R., Prentice, S., Stumpf, J., and Roy, N., "Coordinated tracking and planning using air and ground vehicles," in *International Symposium on Experimental Robotics*, Athens, Greece, 2008.
- [5] Bahl, P. and Padmanabhan, V. N., "RADAR: An in-building RF-based user location and tracking system," in *19th Annual Joint Conference of the IEEE Computer and Communications Societies*, Tel Aviv, Israel, 2000, pp. 775-784.
- [6] Bahl, P., Padmanabhan, V. N., and Balachandran, A., "A software system for locating mobile users: Design, evaluation, and lessons," *Online document, Microsoft Research, February,* 2000.
- [7] Bellusci, G., Yan, J., Janssen, G. J. M., and Tiberius, C. C. J., "An ultra-wideband positioning demonstrator using audio signals," in *4th Workshop on Positioning, Navigation and Communication*, Hannover, Germany, 2007, pp. 71-76.
- [8] Borras, J., Hatrack, P., and Mandayam, N. B., "Decision theoretic framework for NLOS identification," in 48th IEEE Vehicular Technology Conference, Ottawa, Canada, 1998, pp. 1583-1587.
- [9] Bosse, M., Rikoski, R., Leonard, J., and Teller, S., "Vanishing points and 3d lines from omnidirectional video," *The Visual Computer*, vol. 19, no. 6, pp. 417-430, 2003.
- [10] Brunato, M. and Battiti, R., "Statistical learning theory for location fingerprinting in wireless LANs," *Computer Networks*, vol. 47, no. 6, pp. 825-845, 2005.
- [11] Burgard, W., Cremers, A. B., Fox, D., Hänel, D., Lakemeyer, G., Schulz, D., Steiner, W., and Thrun, S., "Experiences with an interactive museum tour-guide robot," *Artificial Intelligence*, vol. 114, no. 1-2, pp. 3-55, 1999.
- [12] Caffery, J. J., Wireless location in CDMA cellular radio systems. Boston: Kluwer, 1999.
- [13] Caffery, J. J., "A new approach to the geometry of TOA location," in *52nd Vehicular Technology Conference*, Boston, USA, 2000, pp. 1943-1949.
- [14] Caffery, J. J. and Stuber, G. L., "Overview of radiolocation in CDMA cellular systems," *IEEE Communications Magazine*, vol. 36, no. 4, pp. 38-45, 1998.

[15] Casper, J. and Murphy, R. R., "Human-robot interactions during the robot-assisted urban search and rescue response at the world trade center," *IEEE Transactions on Systems, Man, and Cybernetics, Part B,* vol. 33, no. 3, pp. 367-385, 2003.

- [16] Castellanos, J. A., Martinez, J. M., Neira, J., and Tardos, J. D., "Simultaneous map building and localization for mobile robots: A multisensor fusion approach," in *IEEE International Conference on Robotics and Automation*, Leuven, Belgium, 1998.
- [17] Castellanos, J. A., Neira, J., and Tardos, J. D., "Multisensor fusion for simultaneous localization and map building," *IEEE Transactions on Robotics and Automation*, vol. 17, no. 6, pp. 908-914, 2001.
- [18] Chan, Y. T. and Ho, K. C., "A simple and efficient estimator for hyperbolic location," *IEEE Transactions on Signal Processing*, vol. 42, no. 8, pp. 1905-1915, 1994.
- [19] Chan, Y. T., Tsui, W. Y., So, H. C., and Ching, P., "Time-of-arrival based localization under NLOS conditions," *IEEE Transactions on Vehicular Technology*, vol. 55, no. 1, pp. 17-24, 2006.
- [20] Chen, P. C., "A non-line-of-sight error mitigation algorithm in location estimation," in *IEEE Wireless Communications and Networking Conference*, New Orleans, USA, 1999, pp. 316-320.
- [21] Chen, Y., Kleisouris, K., Li, X., Trappe, W., and Martin, R. P., "The robustness of localization algorithms to signal strength attacks: A comparative study," in *Distributed Computing in Sensor Systems*. vol. 4026: Springer-Verlag Berlin Heidelberg New York, 2006, pp. 546-563.
- [22] Chen, Y. and Rui, Y., "Real-time speaker tracking using particle filter sensor fusion," *Proceedings of the IEEE*, vol. 92, no. 3, pp. 485-494, 2004.
- [23] Chen, Y. C., Chiang, J. R., Chu, H., Huang, P., and Tsui, A. W., "Sensor-assisted Wi-Fi indoor location system for adapting to environmental dynamics," in 8th Association for Computing Machinery International Symposium on Modeling, Analysis and Simulation of Wireless and Mobile Systems, Montréal, Canada, 2005, pp. 118-125.
- [24] Civera, J., Davison, A. J., and Montiel, J. M. M., "Inverse depth parametrization for monocular SLAM," *IEEE Trans. Robotics*, vol. 24, no. 5, 2008.
- [25] Cong, L. and Zhang, W., "Non-line-of-sight error mitigation in TDOA mobile location," in *IEEE Global Communications Conference*, San Antonio, USA, 2001, pp. 680-684.
- [26] Cong, L. and Zhuang, W., "Hybrid TDOA/AOA mobile user location for wideband CDMA cellular systems," *IEEE Transactions on Wireless Communications*, vol. 1, no. 3, pp. 439-447, 2002.
- [27] Cong, L. and Zhuang, W., "Nonline-of-sight error mitigation in mobile location," *IEEE Transactions on Wireless Communications*, vol. 4, no. 2, pp. 560-573, 2005.
- [28] Coronato, A. and Esposito, M., "Towards an implementation of smart hospital: A localization system for mobile users and devices," in *6th Annual IEEE International Conference on Pervasive Computing and Communications*, Hong Kong, China, 2008, pp. 715-719.
- [29] Correal, N. S., Kyperountas, S., Shi, Q., and Welborn, M., "An UWB relative location system," in *IEEE Conference on Ultra Wideband Systems and Technologies*, Reston, USA, 2003.
- [30] Csorba, M., Uhlmann, J. K., and Durrant-Whyte, H. F., "New approach to simultaneous localization and dynamic map building," in *SPIE 10th Annual AeroSense Symposium*, Orlando, USA 1996, pp. 26-36.

[31] Danicki, E., "The shock wave-based acoustic sniper localization," *Nonlinear Analysis*, vol. 65, no. 5, pp. 956-962, 2006.

- [32] Davison, A. J., Cid, Y. G., and Kita, N., "Real-time 3D SLAM with wide-angle vision," in 5th IFAC Symposium on Intelligent Autonomous Vehicles, Lisbon, Portugal, 2004.
- [33] Davison, A. J., Reid, I. D., Molton, N. D., and Stasse, O., "MonoSLAM: Real-time single camera SLAM," *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 29, no. 6, pp. 1052-1067, 2007.
- [34] Denis, B., Keignart, J., and Daniele, N., "Impact of NLOS propagation upon ranging precision in UWB systems," in *IEEE Conference on Ultra Wideband Systems and Technologies*, Reston, USA, 2003, pp. 379-383.
- [35] DiBiase, J. H., "A high-accuracy, low-latency technique for talker localization in reverberant environments using microphone arrays," PhD dissertation, Brown University, Division of Engineering, Providence, Rhode Island, 2000.
- [36] DiBiase, J. H., Silverman, H. F., and Brandstein, M. S., "Robust localization in reverberant rooms," in *Microphone Arrays: Signal Processing Techniques and Applications*, Brandstein, M. S. and Ward, D., Eds.: Springer-Verlag Berlin Heidelberg New York, 2001, pp. 157-180.
- [37] Do, H., Silverman, H. F., and Yu, Y., "A real-time SRP-PHAT source location implementation using stochastic region contraction (SRC) on a large-aperture microphone array," in *32nd IEEE International Conference on Acoustics, Speech and Signal Processing*, Honolulu, USA, 2007, pp. 121-124.
- [38] Dosso, S. E., Collison, N. E. B., Heard, G. J., and Verrall, R. I., "Experimental validation of regularized array element localization," *The Journal of the Acoustical Society of America*, vol. 115, p. 2129, 2004.
- [39] Durrant-Whyte, H., "Uncertain geometry in robotics," *IEEE Transactions on Robotics and Automation*, vol. 4, no. 1, pp. 23-31, 1988.
- [40] Durrant-Whyte, H. and Bailey, T., "Simultaneous localization and mapping: Part I," *IEEE Robotics & Automation Magazine*, vol. 13, no. 2, pp. 99-110, 2006.
- [41] Elnahrawy, E., Li, X., and Martin, R. P., "The limits of localization using signal strength: A comparative study," in *1st Annual IEEE Communications Society Conference on Sensor and Ad Hoc Communications and Networks*, Santa Clara, USA, 2004, pp. 406-414.
- [42] Evennou, F. and Marx, F., "Advanced integration of WiFi and inertial navigation systems for indoor mobile positioning," *EURASIP Journal on Applied Signal Processing*, vol. 2006, pp. 1-11, 2006.
- [43] Falsi, C., Dardari, D., Mucchi, L., and Win, M. Z., "Time of arrival estimation for UWB localizers in realistic environments," *EURASIP Journal on Applied Signal Processing*, vol. 2006, pp. 1-13, 2006.
- [44] Fang, S. H. and Lin, T. N., "Robust wireless LAN location fingerprinting by SVD-based noise reduction," in *3rd International Symposium on Communications, Control and Signal Processing*, St. Julians, Malta, 2008, pp. 295-298.
- [45] Fang, S. H., Lin, T. N., and Lee, K. C., "A novel algorithm for multipath fingerprinting in indoor WLAN environments," *IEEE Transactions on Wireless Communications*, vol. 7, no. 9, pp. 3579-3588, 2008.

[46] Ferris, B., Fox, D., and Lawrence, N., "WiFi-SLAM using Gaussian process latent variable models," in *20th International Joint Conference on Artificial Intelligence*, Hyderabad, India, 2007, pp. 2480-2485.

- [47] Ferris, B., Hahnel, D., and Fox, D., "Gaussian processes for signal strength-based location estimation," in *Robotics Science and Systems*, Philadelphia, USA, 2006.
- [48] Fleming, R. and Kushner, C., "Low-power, miniature, distributed position location and communication devices using ultra-wideband, nonsinusoidal communication technology," *Aetherwire Inc., Semi-Annual Technical Report, ARPA Contract J-FBI-94-058, Tech. Rep,* 1995.
- [49] Fontana, R. J. and Gunderson, S. J., "Ultra-wideband precision asset location system," in *IEEE Conference on Ultra Wideband Systems and Technologies*, Baltimore, USA, 2002, pp. 147-150.
- [50] Foy, W. H., "Position-location solutions by Taylor-series estimation," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 12, no. 2, pp. 187-194, 1976.
- [51] Frampton, K. D., "Acoustic self-localization in a distributed sensor network," *IEEE Sensors Journal*, vol. 6, no. 1, pp. 166-172, 2006.
- Frens, M. A. and Opstal, A. J., "A quantitative study of auditory-evoked saccadic eye movements in two dimensions," *Experimental Brain Research*, vol. 107, no. 1, pp. 103-117, 1995.
- [53] Garcia, M. A. and Solanas, A., "3D simultaneous localization and modeling from stereo vision," in *IEEE International Conference on Robotics and Automation*, New Orleans, USA, 2004, pp. 847-853.
- [54] Gezici, S., Tian, Z., Giannakis, G. B., Kobayashi, H., Molisch, A. F., Poor, H. V., and Sahinoglu, Z., "Localization via ultra-wideband radios: A look at positioning aspects for future sensor networks," *IEEE Signal Processing Magazine*, vol. 22, no. 4, pp. 70-84, 2005.
- [55] Ghassemzadeh, S. S., Greenstein, L. J., Sveinsson, T., Kavcic, A., and Tarokh, V., "UWB delay profile models for residential and commercial indoor environments," *IEEE Transactions on Vehicular Technology*, vol. 54, no. 4, pp. 1235-1244, 2005.
- [56] Gil-Pinto, A., Fraisse, P., and Zapata, R., "Wireless reception signal strength for relative positioning in a vehicle robot formation," in *IEEE 3rd Latin American Robotics Symposium*, Santiago, Chile, 2006, pp. 100-105.
- [57] Gill, P. E., Murray, W., and Wright, M. H., *Practical optimization*: Academic Press San Diego, 1981.
- [58] Girod, L. and Estrin, D., "Robust range estimation using acoustic and multimodal sensing," in *IEEE/RSJ International Conference on Intelligent Robots and Systems*, Maui, USA, 2001, pp. 1312-1320.
- [59] Goedemé, T., Nuttin, M., Tuytelaars, T., and Van Gool, L., "Omnidirectional vision based topological navigation," *International Journal of Computer Vision*, vol. 74, no. 3, pp. 219-236, 2007.
- [60] Graefenstein, J., Bouzouraa, M. E., GmbH, R. B., and Schwieberdingen, G., "Robust method for outdoor localization of a mobile robot using received signal strength in low power wireless networks," in *IEEE International Conference on Robotics and Automation*, Pasadena, USA, 2008, pp. 33-38.

[61] Guivant, J. E. and Nebot, E. M., "Optimization of the simultaneous localization and map-building algorithm for real-time implementation," *IEEE Transactions on Robotics and Automation*, vol. 17, no. 3, pp. 242-257, 2001.

- [62] Guvenc, I., Chong, C. C., and Watanabe, F., "Joint TOA estimation and localization technique for UWB sensor network applications," in *IEEE 65th Vehicular Technology Conference*, Dublin, Ireland, 2007, pp. 1574-1578.
- [63] Haeberlen, A., Flannery, E., Ladd, A. M., Rudys, A., Wallach, D. S., and Kavraki, L. E., "Practical robust localization over large-scale 802.11 wireless networks," in *10th Annual International Conference on Mobile Computing and Networking*, Philadelphia, USA, 2004, pp. 70-84.
- [64] Halupka, D., Mathai, N. J., Aarabi, P., and Sheikholeslami, A., "Robust sound localization in 0.18 μm CMOS," *IEEE Transactions on Signal Processing*, vol. 53, no. 6, pp. 2243-2250, 2005.
- [65] Heidari, M. and Pahlavan, K., "Identification of the absence of direct path in ToA-based indoor localization systems," *International Journal of Wireless Information Networks*, vol. 15, no. 3, pp. 117-127, 2008.
- [66] Hightower, J. and Borriello, G., "Particle filters for location estimation in ubiquitous computing: A case study," in *UbiComp 2004: Ubiquitous Computing*: Springer-Verlag Berlin Heidelberg New York, 2004, pp. 88-106.
- [67] Hofman, P. M., Van Riswick, J. G., and Van Opstal, A. J., "Relearning sound localization with new ears," *Nature Neuroscience*, vol. 1, no. 5, pp. 417-421, 1998.
- [68] Hollinger, G., Djugash, J., and Singh, S., "Tracking a moving target in cluttered environments with ranging radios," in *IEEE International Conference on Robotics and Automation*, Pasadena, USA, 2008, pp. 1430-1435.
- [69] Hu, J. S., Liu, W. H., Cheng, C. C., and Yang, C. H., "Location and orientation detection of mobile robots using sound field features under complex environments," in *IEEE/RSJ International Conference on Intelligent Robots and Systems*, Beijing, China, 2006, pp. 1151-1156.
- [70] Irahhauten, Z., Bellusci, G., Janssen, G. J. M., Nikookar, H., and Tiberius, C., "Investigation of UWB ranging in dense indoor multipath environments," in *10th IEEE Singapore International Conference on Communication systems*, Singapore, Singapore, 2006, pp. 1-5.
- [71] Jensfelt, P., Kragic, D., Folkesson, J., and Bjorkman, M., "A framework for vision based bearing only 3D SLAM," in *IEEE International Conference on Robotics and Automation*, Orlando, USA, 2006, pp. 1944-1950.
- [72] Jourdan, D. B., "Wireless sensor network planning with application to UWB localization in GPS-denied environments," PhD dissertation, Massachusetts Institute of Technology, Department of Aeronautics and Astronautics, Cambridge, USA, 2006.
- [73] Jourdan, D. B., Deyst Jr, J. J., Win, M. Z., and Roy, N., "Monte Carlo localization in dense multipath environments using UWB ranging," in *IEEE International Conference on Ultra-Wideband*, Zurich, Switzerland, 2005, pp. 314-319.
- [74] Kanatas, A. G., Kountouris, I. D., Kostaras, G. B., and Constantinou, P., "A UTD propagation model in urban microcellular environments," *IEEE Transactions on Vehicular Technology*, vol. 46, no. 1, pp. 185-193, 1997.

[75] Kapralos, B., Jenkin, M., and Milios, E., "Acoustical diffraction modeling utilizing the Huygens-Fresnel principle," in *IEEE International Workshop on Haptic Audio Visual*, Ottawa, Canada, 2005, pp. 39-44.

- [76] Kawai, T., "Sound diffraction by a many-sided barrier or pillar," *Journal of Sound and Vibration*, vol. 79, no. 2, pp. 229-242, 1981.
- [77] Kjærgaard, M. B., "A taxonomy for radio location fingerprinting," in *Location- and Context-Awareness*. vol. 4718, Hightower, J., Schiele, B., and Strang, T., Eds.: Springer-Verlag Berlin Heidelberg New York, 2007, pp. 139-156.
- [78] Knapp, C. and Carter, G., "The generalized correlation method for estimation of time delay," *IEEE Transactions on Acoustics, Speech and Signal Processing*, vol. 24, no. 4, pp. 320-327, 1976.
- [79] Kouyoumjian, R. G. and Pathak, P. H., "A uniform geometrical theory of diffraction for an edge in a perfectly conducting surface," *Proceedings of the IEEE*, vol. 62, no. 11, pp. 1448-1461, 1974.
- [80] Kumon, M., Shimoda, T., Kohzawa, R., Mizumoto, I., and Iwai, Z., "Audio servo for robotic systems with pinnae," in *International Conference on Intelligent Robots and Systems*, Edmonton, Canada, 2005, pp. 1881-1886.
- [81] Ladd, A. M., Bekris, K. E., Rudys, A. P., Wallach, D. S., and Kavraki, L. E., "On the feasibility of using wireless ethernet for indoor localization," *IEEE Transactions on Robotics and Automation*, vol. 20, no. 3, pp. 555-559, 2004.
- [82] Langelaan, J. and Rock, S., "Navigation of small UAVs operating in forests," in *AIAA Guidance, Navigation, and Control Conference and Exhibit*, Providence, USA, 2004, pp. 16-19.
- [83] Lavis, B., Furukawa, T., and Durrant Whyte, H. F., "Dynamic space reconfiguration for Bayesian search and tracking with moving targets," *Autonomous Robots*, vol. 24, no. 4, pp. 387-399, 2008.
- [84] Lee, J. Y. and Scholtz, R. A., "Ranging in a dense multipath environment using an UWB radio link," *IEEE Journal on Selected Areas in Communications*, vol. 20, no. 9, pp. 1677-1683, 2002.
- [85] Lee, J. Y. and Yoo, S., "Large error performance of UWB ranging in multipath and multiuser environments," *IEEE transactions on microwave theory and techniques*, vol. 54, no. 4, pp. 1887-1895, 2006.
- [86] Lee, S. W. and Mase, K., "Activity and location recognition using wearable sensors," *IEEE Pervasive Computing*, vol. 1, no. 3, pp. 24-32, 2002.
- [87] Lemaire, T., Lacroix, S., and Sola, J., "A practical 3D bearing-only SLAM algorithm," in *IEEE/RSJ International Conference on Intelligent Robots*, Edmonton, Canada, 2005, pp. 2449-2454.
- [88] Letchner, J., Fox, D., and LaMarca, A., "Large-scale localization from wireless signal strength," in *AAAI National Conference on Artificial Intelligence*, Pittsburgh, USA, 2005, pp. 15-20.
- [89] Li, J., Conan, J., and Pierre, S., "Mobile station location estimation for MIMO communication systems," in *3rd International Symposium on Wireless Communication Systems*, Valencia, Spain, 2006, pp. 561-564.

[90] Li, Y. Z., Wang, L., Wu, X. M., and Zhang, Y. T., "Experimental analysis on radio transmission and localization of a Zigbee-based wireless healthcare monitoring platform," in *International Conference on Technology and Applications in Biomedicine*, Shenzhen, China, 2008, pp. 488-490.

- [91] Lim, H., Kung, L. C., Hou, J. C., and Luo, H., "Zero-configuration, robust indoor localization: Theory and experimentation," in *IEEE 25th Conference on Computer Communications*, Barcelona, Spain, 2006, pp. 123-125.
- [92] Lin, C. H., Cheng, J. Y., and Wu, C. N., "Mobile location estimation using density-based clustering technique for NLoS environments," *Cluster Computing*, vol. 10, no. 1, pp. 3-16, 2007.
- [93] Liu, L., Deng, P., and Fan, P., "A TOA reconstruction method based on ring of scatterers model," in 4th International Conference on Parallel and Distributed Computing, Applications and Technologies, Chengdu, China, 2003, pp. 375-377.
- [94] Low, Z. N., Cheong, J. H., Law, C. L., Ng, W. T., and Lee, Y. J., "Pulse detection algorithm for line-of-sight (LOS) UWB ranging applications," *IEEE Antennas and Wireless Propagation Letters*, vol. 4, pp. 63-67, 2005.
- [95] Madigan, D., Einahrawy, E., Martin, R. P., Ju, W. H., Krishnan, P., and Krishnakumar, A. S., "Bayesian indoor positioning systems," in *24th Annual Joint Conference of the IEEE Computer and Communications Societies*, Miami, USA, 2005.
- [96] Mak, L. C. and Furukawa, T., "A 6 DoF visual tracking system for a miniature helicopter," in *2nd International Conference on Sensing Technology*, Palmerston North, New Zealand, 2007.
- [97] Mak, L. C., Kumon, M., Whitty, M., Katupitiya, J., and Furukawa, T., "Design and development of micro aerial vehicles and their cooperative systems for target search and tracking," *International Journal of Micro Air Vehicles*, vol. 1, no. 2, pp. 139-153, 2009.
- [98] Mak, L. C., Kumon, M., Whitty, M., Nicoletti, M., Xu, H., Zhan, K., Kalkbrenner, G., Abril, G. C., Atkins, D., Chare, C., Clarke, B., Khurmi, A., Ma, A., Qureshi, F., Zambrano, J. P., Upadhyay, A., Sammons, P., Hu, A. W. L., and Furukawa, T., "Design and development of the micro aerial vehicles for search, tracking And reconnaissance (MAVSTAR) for MAV08," in 1st US-Asian Demonstration and Assessment of Micro Aerial and Unmanned Ground Vehicle Technology, Agra, India, 2008.
- [99] Mak, L. C., Whitty, M., and Furukawa, T., "A localisation system for an indoor rotary-wing MAV using blade mounted LED," *Sensor Review*, vol. 28, no. 2, pp. 125-131, 2008.
- [100] Miao, H., Channel estimation and positioning for multiple antenna systems. Oulu, Finland: University of Oulu, 2007.
- [101] Miao, H., Yu, K., Juntti, M. J., and Platform, H., "Positioning for NLOS propagation: Algorithm derivations and Cramer-Rao bounds," *IEEE Transactions on Vehicular Technology*, vol. 56, no. 5 Part 1, pp. 2568-2580, 2007.
- [102] Montesano, L., Minguez, J., and Montano, L., "Modeling the static and the dynamic parts of the environment to improve sensor-based navigation," in *International Conference on Robotics and Autonomation*, Barcelona, Spain, 2005, pp. 4556-4562.
- [103] Morelli, C., Nicoli, M., Rampa, V., and Spagnolini, U., "Hidden Markov models for radio localization in mixed LOS/NLOS conditions," *IEEE Transactions on Signal Processing*, vol. 55, no. 4, pp. 1525-1542, 2007.

[104] Mountarlier, P. and Chatila, R., "Stochastic multi-sensory data fusion for mobile robot location and environmental modeling," in *Fifth International Symposium on Robotics Research*, Tokyo, Japan, 1989, pp. 85-94.

- [105] Mumolo, E., Nolich, M., and Vercelli, G., "Algorithms for acoustic localization based on microphone array in service robotics," *Robotics and Autonomous Systems*, vol. 42, no. 2, pp. 69-88, 2003.
- [106] Murphy, W. S. and Hereman, W., "Determination of a position in three dimensions using trilateration and approximate distances," Mathematical and Computer Sciences Dept., Colorado School of Mines, Tech. report MCS-95-07, 1995.
- [107] Nag, S., Barnes, M. A., Payment, T., and Holladay, G., "Ultrawideband through-wall radar for detecting the motion of people in real time," in *Processing of Conferences & Publications on Photonics, Optics, & Imaging*, San Jose, USA, 2002, pp. 48-57.
- [108] Nerguizian, C., Despins, C., and Affès, S., "Geolocation in mines with an impulse response fingerprinting technique and neural networks," *IEEE Transactions on Wireless Communications*, vol. 5, no. 3, pp. 603-611, 2006.
- [109] Nicoli, M., Morelli, C., and Rampa, V., "A jump Markov particle filter for localization of moving terminals in multipath indoor scenarios," *IEEE Transactions on Signal Processing*, vol. 56, no. 8, pp. 3801-3809, 2008.
- [110] Omologo, M. and Svaizer, P., "Acoustic event localization using a crosspower-spectrum phase based technique," in *International Conference on Spoken Language Processing*, San Diego, USA, 1994.
- [111] Oppermann, I., Hamalainen, M., and Linatti, J., *UWB theory and applications*. England: John Wiley and Sons, 2004.
- [112] Pan, J. J., Kwok, J. T., Yang, Q., and Chen, Y., "Multidimensional vector regression for accurate and low-cost location estimation in pervasive computing," *IEEE Transactions on Knowledge and Data Engineering*, pp. 1181-1193, 2006.
- [113] Pan, S. J., Kwok, J. T., Yang, Q., and Pan, J. J., "Adaptive localization in a dynamic wifi environment through multi-view learning," in *22nd AAAI Conference on Artificial Intelligence*, Vancouver, Canada, 2007, pp. 1102-1107.
- [114] Patwari, N., Ash, J. N., Kyperountas, S., Hero Iii, A. O., Moses, R. L., and Correal, N. S., "Locating the nodes: Cooperative localization in wireless sensor networks," *IEEE Signal Processing Magazine*, vol. 22, no. 4, pp. 54-69, 2005.
- [115] Paz, L. M., Pinies, P., Tardos, J. D., and Neira, J., "Large-scale 6-DOF SLAM with stereo-in-hand," *IEEE Transactions on Robotics*, vol. 24, no. 5, pp. 946-957, 2008.
- [116] Perera, L. D. L., Wijesoma, W. S., and Adams, M. D., "Data association in dynamic environments using a sliding window of temporal measurement frames," in *IEEE/RSJ International Conference on Intelligent Robots*, Edmonton, Canada, 2005, pp. 753-758.
- [117] Pupilli, M. and Calway, A., "Real-time camera tracking using a particle filter," in *British Machine Vision Conference*, Oxford, UK, 2005, pp. 519-528.
- [118] Qi, Y., Kobayashi, H., and Suda, H., "On time-of-arrival positioning in a multipath environment," *IEEE Transactions on Vehicular Technology*, vol. 55, no. 5, pp. 1516-1526, 2006.

[119] Quill, H., "John Harrison, Copley medallist and the Pound 20,000 longitude prize," *Notes and Records of the Royal Society of London*, vol. 18, no. 2, pp. 146-160, 1963.

- [120] Robinson, M. and Psaromiligkos, I., "Received signal strength based location estimation of a wireless LAN client," in *IEEE Wireless Communications and Networking Conference*, New Orleans, USA, 2005, pp. 2350-2354.
- [121] Rosencrantz, M., Gordon, G., and Thrun, S., "Decentralized sensor fusion with distributed particle filters," in *19th Annual Conference on Uncertainty in Artificial Intelligence*, San Francisco, USA, 2003.
- [122] Roumeliotis, S. I. and Bekey, G. A., "An extended Kalman filter for frequent local and infrequent global sensor data fusion," in *SPIE sensor fusion and decentralized control in autonomous robotic systems*, Pittsburgh, USA, 1997.
- [123] Saffiotti, A. and Broxvall, M., "PEIS ecologies: Ambient intelligence meets autonomous robotics," in *Joint Conference on Smart Objects and Ambient Intelligence: Innovative Context-Aware Services: Usages and Technologies*, Grenoble, France, 2005, pp. 277-281.
- [124] Saripalli, S., Montgomery, J. F., and Sukhatme, G. S., "Vision-based autonomous landing of an unmanned aerial vehicle," in *IEEE International Conference on Robotics and Automation*, Washington, D.C., USA, 2002, pp. 2799-2804.
- [125] Sasaki, Y., Kagami, S., and Mizoguchi, H., "Multiple sound source mapping for a mobile robot by self-motion triangulation," in *IEEE/RSJ International Conference on Intelligent Robots*, Beijing, China, 2006, pp. 380-385.
- [126] Sasiadek, J. Z. and Hartana, P., "Sensor data fusion using Kalman filter," in *3rd International Conference on Information Fusion*, Paris, France, 2000, pp. 19-25.
- [127] Savvides, A., Han, C. C., and Strivastava, M. B., "Dynamic fine-grained localization in ad-hoc networks of sensors," in *International Conference on Mobile Computing and Networking*, Rome, Italy, 2001, pp. 166-179.
- [128] Saxena, A. and Ng, A. Y., "Learning sound location from a single microphone," in *IEEE International Conference on Robotics and Automation*, Kobe, Japan, 2009, pp. 1737-1742.
- [129] Sayed, A. H., Tarighat, A., and Khajehnouri, N., "Network-based wireless location: Challenges faced in developing techniques for accurate wireless location information," *IEEE Signal Processing Magazine*, vol. 22, no. 4, pp. 24-40, 2005.
- [130] Schmidt, R. O., "A new approach to geometry of range difference location," *IEEE Transactions on Aerospace and Electronic Systems*, pp. 821-835, 1972.
- [131] Seow, C. K. and Tan, S. Y., "Non-line-of-sight localization in multipath environment," *IEEE Transactions on Mobile Computing*, vol. 7, no. 5, pp. 647-660, 2008.
- [132] Seow, C. K. and Tan, S. Y., "Non-line-of-sight unidirectional mobile localisation in multipath environment," *Electronics Letters*, vol. 44, no. 2, pp. 141-142, 2008.
- [133] Seshadri, V., Zaruba, G. V., and Huber, M., "A Bayesian sampling approach to in-door localization of wireless devices using received signal strength indication," in *3rd IEEE International Conference on Pervasive Computing and Communications*, Kauai, USA, 2005, pp. 75-84.

[134] Shimoda, T., Nakashima, T., Kumon, M., Kohzawa, R., Mizumoto, I., and Iwai, Z., "Spectral cues for robust sound localization with pinnae," in *International Conference on Intelligent Robots and Systems*, Beijing, China, 2006, pp. 386-391.

- [135] Shkarayev, S., Moschetta, J. M., and Bataill, B., "Aerodynamic Design of VTOL Micro Air Vehicles'," 2007.
- [136] Silverman, H. F., Patterson, J. M., and Wr, II, "Performance of real-time source-location estimators for a large-aperture microphone array," *IEEE Transactions on Speech and Audio Processing*, vol. 13, no. 4, pp. 593-606, 2005.
- [137] Small, R. H., "Vented-box loudspeaker systems part I: Small-signal analysis," *Journal of the Audio Engineering Society*, vol. 21, no. 5, pp. 363-372, 1973.
- [138] Smith, J. and Abel, J., "Closed-form least-squares source location estimation from range-difference measurements," *IEEE Transactions on Acoustics, Speech and Signal Processing*, vol. 35, no. 12, pp. 1661-1669, 1987.
- [139] Smith, P., Reid, I., and Davison, A., "Real-time monocular SLAM with straight lines," in *British Machine Vision Conference*, Edinburgh, UK, 2006, pp. 17-26.
- [140] Smith, R., Self, M., and Cheeseman, P., "Estimating uncertain spatial relationships in robotics," *Autonomous robot vehicles*, vol. 1, pp. 167-193, 1990.
- [141] Smith, R. C. and Cheeseman, P., "On the representation and estimation of spatial uncertainty," *The International Journal of Robotics Research*, vol. 5, no. 4, p. 56, 1986.
- [142] Stasse, O., Davison, A., Sellaouti, R., and Yokoi, K., "Real-time 3D SLAM for humanoid robot considering pattern generator information," in *International Conference on Intelligent Robots and Systems*, Beijing, China, 2006, pp. 348-355.
- [143] Steiner, C., Althaus, F., Troesch, F., and Wittneben, A., "Ultra-wideband geo-regioning: A novel clustering and localization technique," *EURASIP Journal on Advances in Signal Processing*, vol. 8, no. 1, pp. 1-13, 2008.
- [144] Storer, J. A. and Reif, J. H., "Shortest paths in the plane with polygonal obstacles," *Journal of the Association for Computing Machinery*, vol. 41, no. 5, pp. 982-1012, 1994.
- [145] Sukkarieh, S., Nebot, E. M., and Durrant-Whyte, H. F., "A high integrity IMU/GPS navigation loop for autonomous land vehicle applications," *IEEE Transactions on Robotics and Automation*, vol. 15, no. 3, pp. 572-578, 1999.
- [146] Sun, G., Chen, J., Guo, W., and Liu, K. J. R., "Signal processing techniques in network-aided positioning: A survey of state-of-the-art positioning designs," *IEEE Signal Processing Magazine*, vol. 22, no. 4, pp. 12-23, 2005.
- [147] Takanishi, A., Masukawa, S., Mori, Y., and Ogawa, T., "Study on anthropomorphic auditory robot continuous localization of a sound source in horizontal plane," in *11th Annual Conference of the Robotics Society of Japan*, Tokyo, Japan, 1993, pp. 793-796.
- [148] Thiele, A. N., "Loudspeakers in vented boxes: Parts I and II," *Journal of the Audio Engineering Society*, vol. 19, pp. 382-392, 1971.
- [149] Thomas, N. J., Cruickshank, D. G. M., and Laurenson, D. I., "Calculation of mobile location using scatterer information," *Electronics Letters*, vol. 37, no. 19, pp. 1193-1194, 2001.

[150] Tisse, C., Fauvel, T., and Durrant-Whyte, H., "A micro aerial vehicle motion capture system," in *1st International Conference on Sensing Technology*, Palmerston North, New Zealand, 2005, pp. 533-538.

- [151] Valin, J. M., "Auditory system for a mobile robot," PhD dissertation, University ed Sherbrooke, Faculte de genie Genieelectrique et genie informatique, Sherbrooke, Canada, 2005.
- [152] Valin, J. M., Michaud, F., Hadjou, B., and Rouat, J., "Localization of simultaneous moving sound sources for mobile robot using a frequency-domain steered beamformer approach," in *IEEE International Conference on Robotics and Automation*, New Orleans, USA, 2004, pp. 1033-1038.
- [153] Valin, J. M., Michaud, F., and Rouat, J., "Robust 3D localization and tracking of sound sources using beamforming and particle filtering," in *IEEE International Conference on Acoustics*, *Speech and Signal Processing*, Toulouse, France, 2006, pp. 841-844.
- [154] Valin, J. M., Michaud, F., and Rouat, J., "Robust localization and tracking of simultaneous moving sound sources using beamforming and particle filtering," *Robotics and Autonomous Systems*, vol. 55, no. 3, pp. 216-228, 2007.
- [155] Valin, J. M., Michaud, F., Rouat, J., and Letourneau, D., "Robust sound source localization using a microphone array on a mobile robot," in *IEEE/RSJ International Conference on Intelligent Robots and Systems*, Las Vegas, USA, 2003, pp. 1228-1233.
- [156] Venkatraman, S. and Caffery Jr, J., "A statistical approach to non-line-of-sight BS identification," in 5th International Symposium on Wireless Personal Multimedia Communications, Sheraton Waikiki, USA, 2002.
- [157] Venkatraman, S. and Caffery Jr, J., "Hybrid TOA/AOA techniques for mobile location in non-line-of-sight environments," in *IEEE Wireless Communications and Networking Conference*, Altanta, USA, 2004, pp. 274-278.
- [158] Venkatraman, S., Caffery Jr, J., and You, H. R., "A novel ToA location algorithm using LoS range estimation for NLoS environments," *IEEE Transactions on Vehicular Technology*, vol. 53, no. 5, pp. 1515-1524, 2004.
- [159] Wang, C. C., Thorpe, C., and Thrun, S., "Online simultaneous localization and mapping with detection and tracking of moving objects: Theory and results from a ground vehicle in crowded urban areas," in *IEEE International Conference on Robotics and Automation*, Taipei, Taiwan, 2003, pp. 842-849.
- [160] Wang, W., Xiong, J. Y., and Zhu, Z. L., "A new NLOS error mitigation algorithm in location estimation," *IEEE Transactions on Vehicular Technology*, vol. 54, no. 6, pp. 2048-2053, 2005.
- [161] Wang, X., Wang, Z., and O'Dea, B., "A TOA-based location algorithm reducing the errors due to non-line-of-sight (NLOS) propagation," *IEEE Transactions on Vehicular Technology*, vol. 52, no. 1, pp. 112-116, 2003.
- [162] Ward, D. B. and Brandstein, M. S., "Grid-based beamformer design for room-environment microphone arrays," in *IEEE Workshop on Applications of Signal Processing to Audio and Acoustics*, New York, USA, 1999, pp. 23-26.
- [163] Ward, D. B., Lehmann, E. A., and Williamson, R. C., "Particle filtering algorithms for tracking an acoustic source in a reverberant environment," *IEEE Transactions on Speech and Audio Processing*, vol. 11, no. 6, pp. 826-836, 2003.

[164] Whitehouse, K., Karlof, C., and Culler, D., "A practical evaluation of radio signal strength for ranging-based localization," *Association for Computing Machinery SIGMOBILE Mobile Computing and Communications Review*, vol. 11, no. 1, pp. 41-52, 2007.

- [165] Whitty, M., Mak, L. C., Taprell, D., Ma, A., Lee, S., Ng, C. Y., Robinson, N., and Xiao, H., "Development of the MAVSTAR micro aerial vehicle and base station for IMAV09," in 4th US European Workshop and Flight Competition for Micro Air Vehicles Pensacola, USA, 2009.
- [166] Wolf, D. F. and Sukhatme, G. S., "Mobile robot simultaneous localization and mapping in dynamic environments," *Autonomous Robots*, vol. 19, no. 1, pp. 53-65, 2005.
- [167] Wu, L. W., Liu, W. H., Cheng, C. C., and Hu, J. S., "Gaussian mixture-sound field landmark model for robot localization applications," *Advanced Robotics*, vol. 21, no. 5, pp. 619-643, 2007.
- [168] Wu, S., Zhang, Q., Fan, R., and Zhang, N., "Match-filtering based TOA estimation for IR-UWB ranging systems," in *International Wireless Communications and Mobile Computing Conference*, Crete Island, Greece, 2008, pp. 1099-1105.
- [169] Xu, C. and Law, C. L., "Delay-dependent threshold selection for UWB TOA estimation," *IEEE Communications Letters*, vol. 12, no. 5, pp. 380-382, 2008.
- [170] Yang, N., Tian, W. F., Jin, Z. H., and Zhang, C. B., "Particle filter for sensor fusion in a land vehicle navigation system," *Measurement Science and Technology*, vol. 16, no. 3, pp. 677-681, 2005.
- [171] Yang, Q., Pan, S. J., and Zheng, V. W., "Estimating Location Using Wi-Fi," *IEEE Intelligent Systems*, vol. 23, no. 1, pp. 8-13, 2008.
- [172] Yang, Y. and Fathy, A. E., "See-through-wall imaging using ultra wideband short-pulse radar system," in *IEEE Antennas and Propagation Society International Symposium*, Washington, D.C., USA, 2005.
- [173] Yin, J., Yang, Q., and Ni, L., "Adaptive temporal radio maps for indoor location estimation," in 3rd IEEE International Conference on Pervasive Computing and Communications, Hawaii, USA, 2005, pp. 85-94.
- [174] You, C. W., Huang, P., Chu, H., Chen, Y. C., Chiang, J. R., and Lau, S. Y., "Impact of sensor-enhanced mobility prediction on the design of energy-efficient localization," *Ad Hoc Networks*, vol. 6, no. 8, pp. 1221-1237, 2008.
- [175] Yu, K. and Guo, Y. J., "Improved positioning algorithms for nonline-of-sight environments," *IEEE Transactions on Vehicular Technology*, vol. 57, no. 4, pp. 2342-2353, 2008.
- [176] Zakarauskas, P. and Cynader, M. S., "A computational theory of spectral cue localization," *The Journal of the Acoustical Society of America*, vol. 94, p. 1323, 1993.