[60] Altenis S, Jensen CS, Leutenegger ST, Lopez MA. Indexing the Positions of Continuously Moving Objects. ACM Sigmod Int'l Conf. on Management of Data, 2000,29(2):331−342. [doi: 10.1007/978-0-387-35973-1_618]

[61] Ma YZ, Meng XF. Research on indexing for cloud data management. Ruan Jian Xue Bao/Journal of Software, 2015,26(1):145−166 (in Chinese with English abstract). http://www.jos.org.cn/1000-9825/4688.htm [doi: 10.13328/j.cnki.jos.004688]

[62] Wongdeethai S, Siripongwutikorn P. Multipath query spreading over vehicular ad-hoc networks. In: Proc. of the Computer Science and Engineering Conf. 2013. 255−260. [doi: 10.1109/ICSEC.2013.6694789]

[63] Lee EY, Cho HJ, Chung TS, Ryu KY. Moving range *k* nearest neighbor queries with quality guarantee over uncertain moving objects. Information Sciences, 2015,325:324−341. [doi: 10.1016/j.ins.2015.07.034]

[64] Alamri S, Taniar D, Safar M. A taxonomy for moving object queries in spatial databases. Future Generation Computer Systems, 2014,37(7):232−242. [doi: 10.1016/j.future.2014.02.007]

[65] Cho HJ, Kwon SJ, Chung TS. A safe exit algorithm for continuous nearest neighbor monitoring in road networks. Mobile Information Systems, 2013,9(1):37−53. [doi: 10.1155/2013/426294]

[66] Zhao G, Xuan K, Rahayu W, Taniar D, Safar M, Gavrilova ML, Srinivasan B. Voronoi-Based continuous nearest neighbor search in mobile navigation. IEEE Trans. on Industrial Electronics, 2011,58(6):2247−2257. [doi: 10.1109/TIE.2009.2026372]

[67] Xuan K, Zhao G, Taniar D, Safar M, Srinivasan B. Constrained range search query processing on road networks. Concurrency & Computation Practice & Experience, 2011,23(5):491−504. [doi: 10.1002/cpe.1651]

[68] Jing Y, Hu L, Ku WS, Shahabi C. Authentication of *k* nearest neighbor query on road networks. IEEE Trans. on Knowledge & Data Engineering, 2014,26(6):1−1. [doi: 10.1109/TKDE.2013.174]

[69] Feng J, Mukai N, Watanabe T. Incremental maintenance of all-nearest neighbors based on road network. In: Proc. of the Innovations in Applied Artificial Intelligence. Berlin, Heidelberg: Springer-Verlag, 2004. 164−169. [doi: 10.1007/978-3-540-24677-0_18]

[70] Al-Khalidi H, Abbas Z, Safar M. Approximate range query processing in spatial network databases. Multimedia Systems, 2013, 19(2):151−161. [doi: 10.1007/s00530-012-0286-9]

[71] Wang S, Cheema MA, Lin X. Efficiently monitoring reverse *k*-nearest neighbors in spatial networks. Computer Journal, 2013,58(1): 40−56. [doi: 10.1093/comjnl/bxt115]

[72] Fu Q, Sun G, Zhang Z. An efficient pre-computation technique for approximation distance query in road networks. In: Proc. of the IEEE Mobile Data Management (MDM). 2013. 131−135. [doi: 10.1109/MDM.2013.82]

[73] Hua Y, Feng D. A correlation-aware partial materialization scheme for near real-time automotive queries. In: Proc. of the IEEE Smart Computing (SMARTCOMP). 2014. 237−244. [doi: 10.1109/SMARTCOMP.2014.7043864]

[74] Xu J, Gao Y, Liu C, Zhao L, Ding Z. Efficient route search on hierarchical dynamic road networks. Distributed & Parallel Databases, 2014,33(2):227−252. [doi: 10.1007/s10619-014-7146-x]

[75] Delling D, Werneck RF. Customizable point-of-interest queries in road networks. IEEE Trans. on Knowledge & Data Engineering, 2015,27(3):686−698. [doi: 10.1109/TKDE.2014.2345386]

[76] Chen L. Trip planner over probabilistic time-dependent road networks. IEEE Trans. on Knowledge & Data Engineering, 2014,26(8): 2058−2071. [doi: 10.1109/TKDE.2013.159]

[77] Liao B, Leong HU, Man LY, Gong Z. Beyond millisecond latency kNN search on commodity machine. IEEE Trans. on Knowledge & Data Engineering, 2015,27(10):2618−2631. [doi: 10.1109/TKDE.2015.2426702]

[78] Yuan Y, Lian X, Chen L, Sun Y, Wang G. RSkNN: kNN search on road networks by incorporating social influence. IEEE Trans. on Knowledge & Data Engineering, 2016 ,28(6):1575−1588. [doi: 10.1109/TKDE.2016.2518692]

[79] Zeberga K, Cho HJ, Chung TS. A safe-region approach to *k*-RNN queries in directed road network. In: Proc. of the IEEE Int'l Conf. on Computational Science and Engineering (CSE). 2014. 818−824. [doi: 10.1109/CSE.2014.167]

[80] Cho HJ, Jin R, Chung TS. A collaborative approach to moving *k*-nearest neighbor queries in directed and dynamic road networks. Pervasive & Mobile Computing, 2014,17:139−156. [doi: 10.1016/j.pmcj.2014.07.002]

[81] Cho HJ, Ryu K, Chung TS. An efficient algorithm for computing safe exit points of moving range queries in directed road networks. Information Systems, 2014,41(3):1−19. [doi: 10.1016/j.is.2013.10.008]

[82] Attique M, Hailu Y, Gudetaayele S, Cho HJ, Chung TS. A safe exit approach for continuous monitoring of reverse *K*-nearest neighbors in road networks. British Dental Journal, 2015,217(11):617−617.

[83] Yung D, Man LY, Lo E. A safe-exit approach for efficient network-based moving range queries. Data & Knowledge Engineering, 2012,72(1):126−147.

[84] Jang S, Yoo J. Processing continuous skyline queries in road networks. In: Proc. of the Int'l Symp. on Computer Science and ITS Applications. 2008. e3594. [doi: 10.1109/CSA.2008.30]

[85] Huang YK, Chang CH, Lee C. Continuous distance-based skyline queries in road networks. Information Systems, 2012,37(7): 611−633. [doi: 10.1016/j.is.2012.02.003]

[86] Qamar R, Attique M, Chung TS. A pruning algorithm for reverse nearest neighbors in directed road networks. In: Proc. of the IEEE Computer and Information Science (ICIS). 2015. 279−284. [doi: 10.1109/ICIS.2015.7166606]

[87] Feng J, Watanabe T. A fast search method of nearest target object in road networks. Trans. of the Institute of Systems Control & Information Engineers, 2003,16(9):484−491. [doi: 10.5687/iscie.16.484]

[88] Feng J, Mukai N, Watanabe T. Representation of transportation network and continuous nearest neighbor search. Dbsj Letters, 2003, 2:1−4.

[89] Zhang D, Chow CY, Li Q, Zhang X, Xu Y. SMashQ: Spatial mashup framework for *k*-NN queries in time-dependent road networks. Distributed & Parallel Databases, 2013,31(2):259−287. [doi: 10.1007/s10619-012-7110-6]

[90] Costa CF, Nascimento MA, Machado J. A*-Based solutions for KNN queries with operating time constraints in time-dependent road networks. In: Proc. of the IEEE Int'l Conf. on Mobile Data Management (MDM). 2014. 23−32. [doi: 10.1109/MDM.2014.9]

[91] Fan P, Li G, Yuan L. Continuous *K*-nearest neighbor processing based on speed and direction of moving objects in a road network. Telecommunication Systems, 2014,55(3):403−419. [doi: 10.1007/s11235-013-9795-x]

[92] Iyer KBP, Shanthi V. Intelligent path finder for goal directed queries in spatial networks. In: Proc. of the Advances in Mobile Network, Communication and its Applications (MNCAPPS). 2012. 83−86. [doi: 10.1109/MNCApps.2012.22]

[93] Liu F, Tai TD, Hua KA. Dynamic range query in spatial network environments. In: Proc. of the Database and Expert Systems Applications. Springer Berlin Heidelberg, 2006. 254−265. [doi: 10.1007/11827405_25]

[94] Cheema MA, Brankovic L, Lin X, Zhang W, Wang W. Continuous monitoring of distance-based range queries. IEEE Trans. on Knowledge & Data Engineering, 2011,23(8):1182−1199. [doi: 10.1109/TKDE.2010.246]

[95] Kriegel HP, Kröger P, Renz M. Continuous proximity monitoring in road networks. In: Proc. of the ACM Sigspatial Int'l Symp. on Advances in Geographic Information Systems. 2008. 414. [doi: 10.1145/1463434.1463450]

[96] Stojanovic D, Papadopoulos AN, Predic B, Djordjevic-Kajan S, Nanopoulos A. Continuous range monitoring of mobile objects in road networks. Data & Knowledge Engineering, 2008,64(1):77−100. [doi: 10.1016/j.datak.2007.06.021]

[97] Lin CS, Wu SY. Processing directional continuous range queries for mobile objects on road networks. In: Proc. of the IEEE Int'l Conf. on Cyber Technology in Automation, Control, and Intelligent Systems. 2014. [doi: 10.1109/CYBER.2014.6917484]

[98] Nguyen T, He Z, Zhang R, Zhang R, Ward P. Exploiting velocity distribution skew to speed up moving object indexing. Information Systems, 2015,51:72−104. [doi: 10.1016/j.is.2015.03.001]

[99] Sun W, Chen C, Zheng B, Chen C, Zhu L, Liu W. Fast optimal aggregate point search for a merged set on road networks. Information Sciences, 2015,310(C):52−68. [doi: 10.1016/j.ins.2015.03.028]

[100] Kim J, Han WS, Oh J, Kim S, Yu H. Processing time-dependent shortest path queries without pre-computed speed information on road networks. Information Sciences, 2014,255(1):135−154. [doi: 10.1016/j.ins.2013.07.009]

[101] Son W, Hwang SW, Ahn HK. MSSQ: Manhattan spatial skyline queries. Information Systems, 2014,40(1):67−83. [doi: 10.1016/j.is.2013.10.001]

[102] Xu J, Güting RH, Zheng Y. The TM-RTree: An index on generic moving objects for range queries. Geoinformatica, 2014,19(3): 487−524. [doi: 10.1007/s10707-014-0218-2]

[103] Reza RM, Ali ME, Hashem T. Group processing of simultaneous shortest path queries in road networks. In: Proc. of the IEEE Int'l Conf. on Mobile Data Management. 2015. 125−139. [doi: 10.1109/MDM.2015.70]

[104] Ahmadi E, Nascimento MA. A mixed breadth-depth first search strategy for sequenced group trip planning queries. In: Proc. of the IEEE Int'l Conf. on Mobile Data Management. 2015. [doi: 10.1109/MDM.2015.49]

[105] Ma S, Zheng Y, Wolfson O. Real-Time city-scale taxi ridesharing. IEEE Trans. on Knowledge & Data Engineering, 2015,27(7): 1782−1795. [doi: 10.1109/TKDE.2014.2334313]

[106] Li RH, Qin L, Yu J, Mao R. Optimal multi-meeting-point route search. IEEE Trans. on Knowledge & Data Engineering, 2016,28(3): 770−784. [doi: 10.1109/TKDE.2015.2492554]

[107] Duan X, Jin C, Wang X. POP: A passenger-oriented partners matching system. In: Proc. of the IEEE Data Engineering Workshops (ICDEW). 2015. 117−118. [doi: 10.1109/ICDEW.2015.7129560]

[108] Yan D, Zhao Z, Ng W. Efficient processing of optimal meeting point queries in Euclidean space and road networks. Knowledge and Information Systems, 2015,42(2):319−351. [doi: 10.1007/s10115-013-0686-y]

[109] Li M, Li X, Yin J. TORD problem and its solution based on big trajectories data. IEEE Trans. on Intelligent Transportation Systems, 2015. 1−12. [doi: 10.1109/TITS.2015.2491269]

[110] Visvalingam M, Whyatt JD. The Douglas-Peucker algorithm for line simplification: Re-evaluation through visualization. In: Proc. of the Computer Graphics Forum. Elsevier North-Holland, Inc., 1990. 213−228.

[111] Li FF, Cheng DH, Hadjieleftheriou M, Kollios G, Teng SH. On trip planning queries in spatial databases. In: Proc. of the Advances in Spatial and Temporal Databases. Berlin, Heidelberg: Springer-Verlag, 2005. 273−290. [doi: 10.1007/11535331_16]

[112] Aljubayrin S, He Z, Zhang R. Skyline trips of multiple POIs categories. In: Proc. of the Database Systems for Advanced Applications. Springer Int'l Publishing, 2015. 189−206. [doi: 10.1007/978-3-319-18123-3_12]

[113] Goto T, Kosaka T, Noborio H. On the heuristics of A* or A algorithm in ITS and robot path-planning. In: Proc. of the Int'l Conf. on Intelligent Robots and Systems, Vol.2. 2003. 1159−1166. [doi: 10.1109/IROS.2003.1248802]

[114] Yin X, Ding Z, Li J. Moving continuous neighbor queries in spatial network databases. In: Proc. of the IEEE World Congress on Computer Science and Information Engineering. 2009. 535−541. [doi: 10.1109/CSIE.2009.626]

[115] Geisberger R, Vetter C. Efficient routing in road networks with turn costs. In: Proc. of the Experimental Algorithms. Berlin, Heidelberg: Springer-Verlag, 2011. 100−111. [doi: 10.1007/978-3-642-20662-7_9]

[116] Qiao M, Cheng H, Chang L, Yu J. Approximate shortest distance computing: A query-dependent local landmark scheme. IEEE Trans. on Knowledge & Data Engineering, 2012,26(1):462−473. [doi: 10.1109/TKDE.2012.253]

[117] Efentakis A, Pfoser D, Vassiliou Y. SALT: A unified framework for all shortest-path query variants on road networks. In: Proc. of the Experimental Algorithms. Springer Int'l Publishing, 2014. 298−311. [doi: 10.1007/978-3-319-20086-6_23]

[118] Goldberg AV, Harrelson C. Computing the shortest path: A search meets graph theory. In: Proc. of the Soda. Society for Industrial and Applied Mathematics. 2010. 156−165.

[119] Delling D, Werneck RF. Faster customization of road networks. In: Proc. of the Experimental Algorithms. 2013. 30−42. [doi: 10.1007/978-3-642-38527-8_5]

[120] Efentakis A, Pfoser D. GRASP: Extending graph separators for the single-source shortest-path problem. In: Proc. of the Algorithms. Berlin, Heidelberg: Springer-Verlag, 2014. 358−370. [doi: 10.1007/978-3-662-44777-2_30]

[121] Delling D, Goldberg AV, Pajor T, Werneck R. Robust distance queries on massive networks. In: Proc. of the Algorithms. Berlin, Heidelberg: Springer-Verlag, 2014. 321−333. [doi: 10.1007/978-3-662-44777-2_27]

[122] Shekelyan M, Jossé G, Schubert M. ParetoPrep: Efficient lower bounds for path skylines and fast path computation. In: Proc. of the Advances in Spatial and Temporal Databases. Springer Int'l Publishing, 2015. 40−58. [doi: 10.1007/978-3-319-22363-6_3]

[123] Gupta A, Lakshmi J, Nandy SK. Real time routing in road networks. In: Proc. of the IEEE 4th Int'l Conf. on Big Data and Cloud Computing. 2014. 9−16. [doi: 10.1109/BDCloud.2014.85]

[124] Lee KCK, Lee WC, Zheng B, Tian Y. ROAD: A new spatial object search framework for road networks. IEEE Trans. on Knowledge & Data Engineering, 2010,24 (3):547−560. [doi: 10.1109/TKDE.2010.243]

[125] Zhu CJ, Lam KY, Cheng RCK, Poon CK. On using broadcast index for efficient execution of shortest path continuous queries. Information Systems, 2015,49(C):142−162. [doi: 10.1016/j.is.2014.12.005]

[126] Zhu CJ, Lam KY, Han S. Approximate path searching for supporting shortest path queries on road networks. Information Sciences, 2015,325:409−428. [doi: 10.1016/j.ins.2015.06.045]

[127] Zhong R, Li G, Tan KL, Zhou L, Gong Z. G-Tree: An efficient and scalable index for spatial search on road networks. IEEE Trans. on Knowledge & Data Engineering, 2015,27:2175−2189. [doi: 10.1109/TKDE.2015.2399306]

[128] Yan D, Cheng J, Ng W, Liu S. Finding distance-preserving subgraphs in large road networks. In: Proc. of the IEEE Data Engineering (ICDE). 2013. 625−636. [doi: 10.1109/ICDE.2013.6544861]

[129] Felipe ID, Hristidis V, Rishe N. Keyword search on spatial databases. In: Proc. of the IEEE Int'l Conf. on Data Engineering. 2008. 656−665. [doi: 10.1109/ICDE.2008.4497474]

[130] Hariharan R, Hore B, Li C, Mehrotra S. Processing Spatial-Keyword (SK) Queries in Geographic Information Retrieval Systems. In: Proc. of the Int'l Conf. on Scientific & Statistical Database Management, 2007. [doi: 10.1109/SSDBM.2007.22]

[131] Zhou Y, Xie X, Wang C, Guo Y, Ma W. Hybrid index structures for location-based web search. In: Proc. of the ACM CIKM Int'l Conf. on Information and Knowledge Management. 2005. 155−162. [doi: 10.1145/1099554.1099584]

[132] Li Z, Lee KCK, Zheng B, Lee W, Lee D, Wang X. IR-Tree: An efficient index for geographic document search. IEEE Trans. on Knowledge & Data Engineering, 2011,23(4):585−599. [doi: 10.1109/TKDE.2010.149]

[133] Zhang D, Chee YM, Mondal A, Tung A, Kitsuregawa M. Keyword search in spatial databases: Towards searching by document. In: Proc. of the IEEE Int'l Conf. on Data Engineering. 2009. 688−699. [doi: 10.1109/ICDE.2009.77]

[134] Guo L, Shao J, Aung HH, Tan K. Efficient continuous top-*k* spatial keyword queries on road networks. Geoinformatica, 2014,19(1): 29−60. [doi: 10.1007/s10707-014-0204-8]

[135] Li W, Guan J, Zhou S. Efficiently evaluating range-constrained spatial keyword query on road networks. In: Proc. of the Database Systems for Advanced Applications. Berlin, Heidelberg: Springer-Verlag, 2014. 283−295. [doi: 10.1007/978-3-662-43984-5_21]

[136] Li YH, Li GH, Shu LC. Continuous monitoring of top-*k* spatial keyword queries in road networks. Journal of Information Science and Engineering, 2015,31:1831−1848.

[137] Gao Y, Zhao J, Zheng B, Chen G. Efficient collective spatial keyword query processing on road networks. IEEE Trans. on Intelligent Transportation Systems, 2015,8(1):1−12. [doi: 10.1109/TITS.2015.2477837]

[138] Gao Y, Qin X, Zheng B, Chen G. Efficient reverse top-*k* Boolean spatial keyword queries on road networks. IEEE Trans. on Knowledge & Data Engineering, 2015,27(5):1205−1218. [doi: 10.1109/TKDE.2014.2365820]

[139] Fang H, Zhao P, Sheng VS, Wu J, Xu J, Liu A, Cui Z. Effective spatial keyword query processing on road networks. In: Proc. of the Databases Theory and Applications. Springer Int'l Publishing, 2015. 194−206. [doi: 10.1007/978-3-319-19548-3_16]

[140] Zhao P, Kuang X, Sheng VS, Xu J, Wu J, Cui Z. Scalable top-*k* spatial image search on road networks. In: Proc. of the Database Systems for Advanced Applications. Springer Int'l Publishing, 2015. 379−396. [doi: 10.1007/978-3-319-18123-3_23]

[141] Liu XP, Wan CX, Liu DX, Liao GQ. Survey on spatial keyword search. Ruan Jian Xue Bao/Journal of Software, 2016,27(2): 329−347 (in Chinese with English abstract). http://www.jos.org.cn/1000-9825/4934.htm [doi: 10.13328/j.cnki.jos.004934]

[142] Piao C, Li X. Privacy preserving-based recommendation service model of mobile commerce and anonimity algorithm. In: Proc. of the IEEE e-Business Engineering (ICEBE). 2015. 420−427. [doi: 10.1109/ICEBE.2015.77]

[143] Kim YK, Hossain A, Hossain AA, Chang JW. Hilbert-Order based spatial cloaking algorithm in road network. Concurrency & Computation Practice & Experience, 2013,25(1):143−158. [doi: 10.1002/cpe.2844]

[144] Dang TK, Nguyen VN, Vu DL, Kung J. Utilizing spatio-temporal data index for location privacy protection. In: Proc. of the Database and Expert Systems Applications (DEXA). 2013. 15−20. [doi: 10.1109/DEXA.2013.7]

[145] Um JH, Kim HD, Chang JW. An advanced cloaking algorithm using Hilbert curves for anonymous location based service. In: Proc. of the IEEE Int'l Conf. on Privacy, Security, Risk and Trust. 2010. 1093−1098. [doi: 10.1109/SocialCom.2010.162]

[146] Gustav YH, Wu X, Ren Y, Wang Y, Zhang F. Dummy based privacy preservation in continuous querying road network services. In: Proc. of the IEEE Cyber-Enabled Distributed Computing and Knowledge Discovery (CyberC). 2014. 94−101. [doi: 10.1109/CyberC.2014.24]

[147] Gustav YH, Wu X, Ren Y, Wang Y, Zhang F. Achieving absolute privacy preservation in continuous query road network services. In: Proc. of the Advanced Data Mining and Applications. Springer Int'l Publishing, 2014. 279−292. [doi: 10.1007/978-3-319-14717-8_22]

[148] Chim TW, Yiu SM, Hui LCK, Li VOK. VSPN: VANET-based secure and privacy-preserving navigation. IEEE Trans. on Computers, 2014,63(2):510−524. [doi: 10.1109/TC.2012.188]

[149] Wang L, Meng XF. Location privacy preservation in big data era: A survey. Ruan Jian Xue Bao/Journal of Software, 2014,25(4): 693−712 (in Chinese with English abstract). http://www.jos.org.cn/1000-9825/4551.htm [doi: 10.13328/j.cnki.jos.004551]

[150] Ray S. Towards high performance spatio-temporal data management systems. In: Proc. of the IEEE Int'l Conf. on Mobile Data Management (MDM). 2014. 19−22. [doi: 10.1109/MDM.2014.61]

[151] Sun F, Wang L. Performance analysis of B+-tree and CSB+-tree in main memory database. In: Proc. of the IEEE Workshop on Electronics, Computer and Applications. 2014. 265−268. [doi: 10.1109/IWECA.2014.6845607]

[152] Liu L, Qin XL, Zheng GN, Li BH. An energy-efficient spatial window query processing algorithm in wireless sensor networks. Chinese Journal of Computers, 2011,34(5):763−778 (in Chinese with English abstract). [doi: 10.3724/SP.J.1016.2011.00763]

[153] Wang TC, Qin XL, Liu L, Ding YW. Secure and energy-efficient spatial data aggregation algorithm in wireless sensor networks. Ruan Jian Xue Bao/Journal of Software, 2014,25(8):1671−1684 (in Chinese with English abstract). http://www.jos.org.cn/1000-9825/4663.htm [doi: 10.13328/j.cnki.jos.004663]

[154] Ren SL, Tao YB, Lin H. Interactive visual analysis of fake plate vehicles detection. Journal of Computer-Aided Design & Computer Graphics, 2016,28(11):1887−1897 (in Chinese with English abstract).

附中文参考文献:

[1] 乔少杰,韩楠,王超,祝峰,唐常杰.基于路网的移动对象动态双层索引结构.计算机学报,2014(9):1947−1958.

[9] 徐红波,郝忠孝.一种基于 Z 曲线近似 *k*-最近对查询算法.计算机研究与发展,2008,45(2):310−317.

[13] 张敬敏,王培崇,路凤佳.道路网络中的移动对象索引方法研究.计算机工程与应用,2009,45(12):144−146.

[15] 丁治明,李肖南,余波.网络受限移动对象过去、现在及将来位置的索引.软件学报,2009,20(12):3193−3204. http://www.jos.org.cn/1000-9825/3400.htm [doi: 10.3724/SP.J.1001.2009.03400]

[25] 丁治明.一种适合于频繁位置更新的网络受限移动对象轨迹索引.计算机学报,2012,35(7):1448−1461. [doi: 10.3724/SP.J.1016.2012.01448]

[27] 冯钧,史涯晴,唐志贤,芮彩华.路网移动对象聚集索引技术.吉林大学学报:工学版,2014,44(6):1799−1805.

[36] 郭黎敏,丁治明,胡泽林,陈超.基于路网的不确定性轨迹预测.计算机研究与发展,2010,47(1):104−112.

[43] 乔少杰,李天瑞,韩楠,高云君,元昌安,王晓腾,唐常杰.大数据环境下移动对象自适应轨迹预测模型.软件学报,2015,26(11):2869−2883. http://www.jos.org.cn/1000-9825/4889.htm [doi: 10.13328/j.cnki.jos.004889]

[50] 许潇,冯钧,陆佳民,唐志贤,张立霞.HINMO:基于 Hadoop 平台的路网移动对象分布式索引结构.计算机研究与发展,2015(S1).

[59] 郭薇,郭菁,胡志勇.空间数据库索引技术.上海:上海交通大学出版社,2006.

[61] 马友忠,孟小峰.云数据管理索引技术研究.软件学报,2015,26(1):145−166. http://www.jos.org.cn/1000-9825/4688.htm [doi: 10.13328/j.cnki.jos.004688]

[141] 刘喜平,万常选,刘德喜,廖国琼.空间关键词搜索研究综述.软件学报,2016,27(2):329−347. http://www.jos.org.cn/1000-9825/4934.htm [doi: 10.13328/j.cnki.jos.004934]

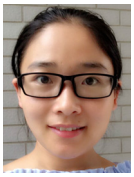
[149] 王璐,孟小峰.位置大数据隐私保护研究综述.软件学报,2014,25(4):693−712. http://www.jos.org.cn/1000-9825/4551.htm [doi: 10.13328/j.cnki.jos.004551]

[152] 刘亮,秦小麟,郑桂能,李博涵.能量高效的无线传感器网络空间范围查询处理算法.计算机学报,2011,34(5):763−778. [doi: 10.3724/SP.J.1016.2011.00763]

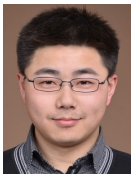
[153] 王涛春,秦小麟,刘亮,丁有伟.无线传感器网络中安全高效的空间数据聚集算法.软件学报,2014,25(8):1671−1684. http://www.jos.org.cn/1000-9825/4663.htm [doi: 10.13328/j.cnki.jos.004663]

[154] 任水林,陶煜波,林海.交互式套牌车可视识别与分析.计算机辅助设计与图形学学报,2016,28(11):1887−1897.

冯钧(1969－),女,江苏武进人,博士,教授,博士生导师,CCF 专业会员,主要研究领域为时空间数据管理,智能数据处理与数据挖掘,水利信息化.



张立霞(1990－),女,硕士生,主要研究领域为时空数据索引,ITS,大数据 hadoop.



陆佳民(1983－),男,博士,讲师,CCF 专业会员,主要研究领域为移动对象数据管理,分布式数据处理,水利信息化.

王冲(1991－),男,硕士生,主要研究领域为时空数据索引,ITS.