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Biomedical Informatics Group  
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## RESEARCH INTERESTS

### Biomedical Informatics and Bioinformatics

Comprehensive Analysis of Next Generation RNA-seq Data  
Systematical Characterization of Human Transcriptome  
Semantics-Oriented, Effective Study of Cancer Genome Sequencing

### Data Semantics and Semantic Technologies

Ontology Development and Engineering  
Semantic Data Annotation, Integration, and Search  
Automated Ontology Matching/Alignment

### Machine Intelligence and Big Data

Formal Knowledge Representation and Sharing  
Semantics-Enhanced Knowledge Acquisition and Data Mining

## EDUCATION

Ph.D., Computer Science and Engineering, University of South Carolina	2007
M.E., Computer Science and Engineering, University of South Carolina	2004

## WORK EXPERIENCE

### Employment at the University of South Alabama:

- August 2017 – Present      Full Professor
- August 2015 – May 2017      Associate Professor
- August 2009 – May 2015      Assistant Professor

### Prior Employment:

- August 2007 – May 2009      Assistant Professor, Benedict College
- June 2007 – August 2007      Research Specialist, Medical University of South Carolina

## GRANTS

### Current Support and Completed Projects

- National Institutes of Health U01 Grant, “OmniSearch: A semantic tool for discovering microRNAs’ critical roles in human cancers,” NIH/NCI U01CA180982, **\$0.91M**, 08/01/2014 – 07/31/2018, **Role: Principal Investigator (Single PI)**.

- National Science Foundation, “MRI: Acquisition of Scanning Transmission Electron Microscope System for Investigation and Characterization of Complex, Nanoscale Systems,” NSF CBET-1428312, **\$1M**, 08/15/2014 – 07/31/2017, Role: Senior Personnel (PI: Palanki).
- USA Faculty Development Council Grant, “Knowledge Sharing in MiRNA Target Prediction,” 05/27/2011 – 05/26/2012, **Role: Principal Investigator**.
- Department of Energy HERE Program, “Event-Driven Semantic Decision Support System based on CO-EDS (Cybersecurity Ontologies for Energy Delivery Systems),” 05/15/2012 – 08/10/2012, **Role: Principal Investigator**.
- USA Cancer Research Fund, “Discovery of Cancer Genome Mutations using Multi-Layered Vector Spaces Model,” 08/01/2011 – 07/31/2012, **Role: Co-Principal Investigator**.

### Pending Grants

- NIH NCI Advanced Development of Informatics Technologies for Cancer Research and Management (NCI ITCR U24), “OmniSearch Plus: a semantics-driven informatics tool to facilitate unraveling critical roles of non-coding RNA regulations in human cancers,” **Role: Principal Investigator**.
- NIH NCI Parent R01, “Building an evidence-based Semantic Web knowledge base of obesity and cancer for accessing quality online health information,” **Role: Co-Investigator and site PI**.
- NIH NCI Advanced Development of Informatics Technologies for Cancer Research and Management (NCI ITCR U24), “Tools for model-driven clinical data normalization for cancer research,” **Role: Co-Investigator and site PI**.

## PUBLICATIONS

(\*: Corresponding Author)

### Books

70. **J. Huang\***, G.M. Borchert, D. Dou, J. Huan, W. Lan, M. Tan, and B. Wu, editors, *Bioinformatics in microRNA research*, Springer series of Methods in Molecular Biology, Humana Press, 2017 (ISBN: 978-1-4939-7044-5; DOI: 10.1007/978-1-4939-7046-9).
69. **J. Huang\***, *Towards mutual understanding among ontologies: Rule-based and learning-based matching algorithms for ontologies*, VDM, 2008 (ISBN: 978-3-639-11556-7).
68. **J. Huang\***, R. Kowalczyk\*, Z. Maamar\*, D. Martin\*, I. Müller\*, S. Stoutenburg\*, and K.P. Sycara\*, editors, *Service-oriented computing: Agents, semantics, and engineering*, Springer-Verlag, vol. LNCS 4504, Berlin, 2007.

### Journal Papers

67. B. Wu\*, **J. Huang**, M. Kasukurthi, J. Bian, K. Fukuo, K. Suzuki, G. Yoshino, and T. Kazumi,

- “Different associations of trunk and lower-body fat mass distribution with cardiometabolic risk factors between healthy, middle-aged men and women,” (in press) *International Journal of Endocrinology*, October 2017.
66. L. Zhang, R. Li, J. He, Q. Yang, Y. Wu, **J. Huang\***, and B. Wu\*, “Co-expression analysis among microRNAs, long non-coding RNAs, and messenger RNAs to understand the pathogenesis and progression of diabetic kidney disease at the genetic level,” *Methods*. 2017 May 31. pii: S1046-2023(17)30046-4. doi: 10.1016/j.ymeth.2017.05.023. Available online May 31, 2017. PubMed PMID: 28577935.
  65. N. de Silva, D. Dou\*, and J. Huang, “Discovering inconsistencies and similarities in PubMed abstracts through ontology-based information extraction,” (under review) *Journal of Biomedical Informatics*, 2017.
  64. B. Wu\*, **J. Huang**, M. Kasukurthi, F. Huang, J. Bian, K. Fukuo, K. Suzuki, G. Yoshino, and T. Kazumi, “An integrative approach to investigate the association among high-sensitive C-reactive protein, body fat mass distribution, and other cardiometabolic risk factors in young healthy women,” (under review) *International Journal of Endocrinology*, 2017.
  63. H. Jin, Z. Yu, X. Wang, W. Chen, S. Guo, M. Kasukurthi, G.M. Borchert, and **J. Huang\***, “Use Gene Expression Omnibus database and OmniSearch semantic search software to explore microRNA-related biomarkers in glioblastoma,” (under review) *BMC Medical Informatics and Decision Making*, 2017.
  62. H. Chen, D. Zhang, G. Zhang, X. Li, Y. Liang, M. Kasukurthi, G.M. Borchert, and **J. Huang\***, “Semantics-oriented approach to investigate microRNA regulation mechanisms on glucocorticoid resistance in pediatric acute lymphoblastic leukemia,” (under review) *BMC Medical Informatics and Decision Making*, 2017.
  61. J.A. Lossio-Ventura, W. Hogan, F. Modave, A. Hicks, Y. Guo, Z. He, M. Vasconcelos, Y. Wu, F. Huang, **J. Huang**, and J. Bian\*, “Automatic construction of an obesity and cancer knowledge base from biomedical literature,” (under review) *BMC Medical Informatics and Decision Making*, 2017.
  60. **J. Huang\***, F. Gutierrez, H.J. Strachan, D. Dou, W. Huang, B. Smith, J.A. Blake, K. Eilbeck, D.A. Natale, Y. Lin, B. Wu, N. de Silva, X. Wang, Z. Liu, G.M. Borchert, M. Tan, and A. Ruttenberg, “OmniSearch: A semantic search system based on the Ontology for MicroRNA Target (OMIT) for microRNA-target gene interaction data,” *J Biomed Semantics*. 2016 May 10;7:25. doi: 10.1186/s13326-016-0064-2. eCollection 2016. PubMed PMID: 27175225; PubMed Central PMCID: PMC4863347.
  59. **J. Huang\***, K. Eilbeck, B. Smith, J.A. Blake, D. Dou, W. Huang, D.A. Natale, A. Ruttenberg, J. Huan, M.T. Zimmermann, G. Jiang, Y. Lin, B. Wu, H.J. Strachan, Y. He, S. Zhang, X. Wang, Z. Liu, G.M. Borchert, and M. Tan, “The Non-Coding RNA Ontology (NCRO): A comprehensive resource for the unification of non-coding RNA biology,” *J Biomed Semantics*. 2016 May 4;7:24. doi: 10.1186/s13326-016-0066-0. eCollection 2016. PubMed PMID: 27152146; PubMed Central

PMCID: PMC4857245.

58. **J. Huang\***, D. Dou, J. She, L. Guo, M. Kasukurthi, P. Yang, A.H. Limper, and Y. Yang, “An innovative approach combining genome-wide study, semantic analysis, and biological validation to investigate microRNA::mRNA regulatory interactions in chronic obstructive pulmonary disease and lung cancer,” (under review), *Int. J. Mol. Sci.* 2017.
57. **J. Huang\***, K. Eilbeck, B. Smith, J.A. Blake, D. Dou, W. Huang, D.A. Natale, A. Ruttenberg, J. Huan, M.T., Zimmermann, G. Jiang, Y. Lin, B. Wu, H.J. Strachan, N. de Silva, M. Kasukurthi, V. Jha, Y. He, S. Zhang, X. Wang, Z. Liu, G.M. Borchert, and M. Tan, “The development of non-coding RNA ontology,” *Int. J. Data Mining and Bioinformatics*, 15(3):214-232, June 2016. doi: 10.1504/IJDMB.2016.077072. PubMed Central PMCID: PMC5156483; NIHMSID: NIHMS795655.
56. **J. Huang\***, B. Liu, Y. Liu, M. Kasukurthi, and J. Chen, “Explore microRNA regulation mechanisms in osteoarthritis with an ontology-driven analytical software tool,” (under review), *Int. J. Mol. Sci.* 2017.
55. Z. Liu, K. Smith, H.T. Khong, **J. Huang**, E.Y. Erin Ahn, M. Zhou, and M. Tan\*, “miR-125b regulates differentiation and metabolic reprogramming of T cell acute lymphoblastic leukemia through directly targeting A20,” *Journal of Oncotarget*, 2016 Nov 29;7(48):78667-78679. doi: 10.18632/oncotarget.12018. PubMed PMID: 27637078; PubMed Central PMCID: PMC5346668.
54. **J. Huang\***, J. Dang, G.M. Borchert, K. Eilbeck, H. Zhang, M. Xiong, W. Jiang, H. Wu, J.A. Blake, D.A. Natale, and M. Tan, “OMIT: Dynamic, semi-automated ontology development for the microRNA domain,” *PLOS ONE*, 9(7): 1-16, e100855, July 2014. doi:10.1371/journal.pone.0100855. eCollection 2014. PubMed PMID: 25025130; PubMed Central PMCID: PMC4099014.
53. Y. Liu, X. Li, N. Liu, **J. Huang**, and Y. Lin\*, “MIAGO: a curated RDF/OWL resource of microRNAs and respective targets in aging studies,” (under review) *Database Journal*, Oct. 2016.
52. B. Wu\*, **J. Huang**, K. Fukuo, K. Suzuki, G. Yoshino, and T. Kazumi, “Phenotypic characteristics of normal-weight obesity in Japanese sedentary and endurance trained young women,” (under review) *Journal of Atherosclerosis and Thrombosis*, Dec. 2016.
51. M. Zhu\*, W. Wang, and **J. Huang**, “Improved initial cluster center selection in k-means clustering,” *Engineering Computations*, 31(8): 1661-1667, Nov. 2014 (doi: 10.1108/EC-11-2012-0288).
50. M. Zhu\*, W. Wang, B. Liu, and **J. Huang**, “Efficient video panoramic image stitching based on an improved selection of Harris Corners and a multiple-constraint corner matching,” *PLOS ONE*, 8(12): 1-15, Dec. 2013 (doi: 10.1371/annotation/ead5385-44a7-4a4f-aa1b-2194affdf310).
49. B. Wu\*, **J. Huang**, K. Fukuo, K. Suzuki, G. Yoshino, and T. Kazumi, “Different associations of trunk and leg fat mass between both genders,” (under review) *Journal of Atherosclerosis and Thrombosis*, Dec. 2016.

48. M. Zhu\*, W. Wang, B. Liu, and **J. Huang**, “Improved prototype selection in synergetic pattern recognition to recognize human face expressions,” *Journal of Algorithms and Computational Technology*, 7(4): 541-552, Multi Science Publishing, Dec. 2013 (doi: 10.1260/1748-3018.7.4.541).
47. M. Zhu\*, W. Wang, B. Liu, and **J. Huang**, “A fast image stitching algorithm via multiple-constraint corner matching,” *Mathematical Problems in Engineering*, Volume 2013 (2013), Article ID 157847, pp. 1-6, Sept. 2013.
46. **J. Huang\***, D. Dou, J. Dang, J.H. Pardue, X. Qin, J. Huan, W.T. Gerthoffer, and M. Tan, “Knowledge acquisition, semantic text mining, and security risks in health and biomedical informatics,” *World Journal of Biological Chemistry*, 3(2): 27-33, Baishideng, Feb. 2012 (doi: 10.4331/wjbc.v3.i2.27).
45. **J. Huang\***, C. Townsend, D. Dou, H. Liu, and M. Tan, “OMIT: A domain-specific knowledge base for microRNA target prediction,” *Pharmaceutical Research*, (**impact factor: 4.74**), Springer, 28(12): 3101-3104, Dec. 2011, published online Aug. 2011 (doi:10.1007/s11095-011-0573-8).
44. **J. Huang\***, L. He, and G.V. Davidson-Shivers, “Educational assessment via a Web-based intelligent system,” *US-China Education Review*, 8(5): 666-674, May 2011.
43. **J. Huang**, J. Dang, M.N. Huhns, and W.J. Zheng\*, “Use artificial neural network to align biological ontologies,” *BMC Genomics* 2008, 9 (Suppl 2): S16 (**impact factor: 3.93**).
42. **J. Huang**, J. Dang, and M.N. Huhns\*, “Ontology alignment as a basis for mobile service integration and invocation,” *International Journal of Pervasive Computing and Communications*, 3(2): 138-158, Emerald, 2007 (**acceptance rate < 17%**).

### Book Chapters

41. **J. Huang\*** and J. Dang, “Context-sensitive ontology matching in electronic business,” *Electronic Business Interoperability: Concepts, Opportunities, and Challenges*. Ejub Kajan, editor, IGI Global, 2010, pp. 279-301.
40. **J. Huang**, J. Dang, and M.N. Huhns\*, “Ontology-based partner selection in business interaction,” *Handbook of Ontologies for Business Interaction*. Peter Rittgen, editor, IGI Global, 2007, pp. 364-380.
39. **J. Huang**, R. Zavala, B. Mendoza, and M.N. Huhns\*, “Reconciling agent ontologies for Web service applications,” *Multiagent System Technologies: Third German Conference (MATES-05)*. Torsten Eymann, Franziska Klügl, Winfried Lamersdorf, Matthias Klusch, and Michael N. Huhns, editors, Springer Verlag, Vol. LNAI 3550, Berlin, 2005, pp. 106-117.

### Conference and Workshop Papers

38. B. Wu\*, **J. Huang\***, M. Kasukurthi, F. Huang, J. Bian, K. Fukuo, K. Suzuki, G. Yoshino, and T. Kazumi, “Combine biological experiments, statistical analysis, and semantic search to discover association among high-sensitive C-reactive protein, body fat mass distribution, and other

- cardiometabolic risk factors in young healthy women,” (in press) *2017 IEEE International Conference on Bioinformatics and Biomedicine (BIBM-17)*, Kansas City, MO, Nov. 2017.
37. H. Jin, Z. Yu, X. Wang, W. Chen, S. Guo, M. Kasukurthi, G.M. Borchert, and **J. Huang\***, “Computational analysis to discover microRNA biomarkers in glioblastoma,” (in press) *2017 IEEE International Conference on Bioinformatics and Biomedicine (BIBM-17)*, Kansas City, MO, Nov. 2017.
  36. H. Chen, D. Zhang, G. Zhang, X. Li, Y. Liang, M. Kasukurthi, G.M. Borchert, and **J. Huang\***, “MeSH term-based semantic analysis of microRNA regulation on glucocorticoid resistance in pediatric acute lymphoblastic leukemia,” (in press) *2017 IEEE International Conference on Bioinformatics and Biomedicine (BIBM-17)*, Kansas City, MO, Nov. 2017.
  35. **J. Huang\***, D. Dou, M. Tan, G.M. Borchert, K. Eilbeck, A. Ruttenberg, and P. Yang, “Semantics-oriented data science and computational life sciences: innovative application of semantic technologies in microRNA and lncRNA research,”(in press) *The 7th IEEE International Conference on Computational Advances in Bio and medical Sciences (ICCABS-17)*, Orlando, FL, Oct. 2017.
  34. N. de Silva, D. Dou\*, and **J. Huang**, “Discovering inconsistencies in PubMed abstracts through ontology-based information extraction,” *Proc. 8th ACM Conference on Bioinformatics, Computational Biology, and Health Informatics (BCB-17)*, pp. 362-371, ACM Press, Boston, MA, Aug. 2017 (doi: 10.1145/3107411.3107452).
  33. **J. Huang\***, D. Dou, J. She, A.H. Limper, Y. Yang, and P. Yang, “A comprehensive (biological and computational) investigation on the role of microRNA::mRNA regulations performed in chronic obstructive pulmonary disease and lung cancer,” *Proc. 2016 IEEE International Conference on Bioinformatics and Biomedicine (BIBM-16)*, pp. 1067-1072, IEEE Computer Society Press, Shenzhen, China, Dec. 2016.
  32. L. Zhang, R. Li, Q. Yang, Y. Wu, **J. Huang\***, and B. Wu\*, “Innovative microRNA-lncRNA-mRNA co-expression analysis to understand the pathogenesis and progression of diabetic kidney disease,” *Proc. 2016 IEEE International Conference on Bioinformatics and Biomedicine (BIBM-16)*, pp. 688-693, IEEE Computer Society Press, Shenzhen, China, Dec. 2016.
  31. **J. Huang\***, B. Liu, Y. Liu, and J. Chen, “The utilization of the OmniSearch semantic search tool to explore various microRNA regulation mechanisms in osteoarthritis,” *Proc. 2016 IEEE International Conference on Bioinformatics and Biomedicine (BIBM-16)*, pp. 1073-1078, IEEE Computer Society Press, Shenzhen, China, Dec. 2016.
  30. F. Sheldon\*, D. Manz, **J. Huang**, T. Morris, R. Abercrombie, D. Wei, and D. Fetzer, “Intrinsically resilient energy control systems: Cybersecurity challenges for critical public infrastructures,” (under review) *The 2016 IEEE Symposium Series on Computational Intelligence (IEEE SSCI 2016)*, Athens, Greece, Dec. 2016.
  29. **J. Huang\***, K. Eilbeck, J.A. Blake, D. Dou, D.A. Natale, A. Ruttenberg, B. Smith, M.T.

- Zimmermann, G. Jiang, Y. Lin, B. Wu, Y. He, S. Zhang, X. Wang, H. Zhang, Z. Liu, and M. Tan, "A domain ontology for the non-coding RNA field," *Proc. 2015 IEEE International Conference on Bioinformatics and Biomedicine (BIBM-15)*, pp. 621-624, IEEE, Washington D.C., Nov. 2015.
28. **J. Huang\***, F. Gutierrez, D. Dou, J.A. Blake, K. Eilbeck, D.A. Natale, B. Smith, Y. Lin, X. Wang, Z. Liu, M. Tan, and A. Ruttenberg, "A semantic approach for knowledge capture of microRNA-target gene interactions," *Proc. BHI Workshop at 2015 IEEE International Conference on Bioinformatics and Biomedicine (BIBM-15)*, pp. 975-982, IEEE, Washington D.C., Nov. 2015.
  27. B. Wu\*, **J. Huang**, K. Fukuo, K. Suzuki, G. Yoshino, and T. Kazumi, "Associations between C reactive protein and body fat mass distribution, adipokines, oxidative stress index, and arterial stiffness and thickness in healthy young women," *Proc. The 19th Scientific Meeting of the Chinese Diabetes Society*, Aug. 2015.
  26. **J. Huang\***, J. Dang, X. Lu, M. Xiong, W.T. Gerthoffer, and M. Tan, "Semi-automated microRNA ontology development based on artificial neural networks," *Proc. 2013 IEEE International Conference on Bioinformatics and Biomedicine (BIBM-13)*, pp. 526-529, IEEE, Shanghai, China, Dec. 2013.
  25. **J. Huang\***, J. Huan, A. Tropsha, J. Dang, M. Xiong, and W. Jiang, "Semantics-driven frequent data pattern mining on electronic health records for effective adverse drug event monitoring," *Proc. 2013 IEEE International Conference on Bioinformatics and Biomedicine (BIBM-13)*, pp. 608-511, IEEE, Shanghai, China, Dec. 2013.
  24. F. Sheldon\*, **J. Huang**, J. Dang, D. Fetzer, S. Goose, J. Kirsch, D. Manz, T. Morris, and D. Wei, "Intrinsically resilient energy control systems," *Proc. 8<sup>th</sup> Annual Cyber Security and Information Intelligence Research Workshop (CSIRW-12)*, Oak Ridge, TN, Jan. 2013.
  23. F. Sheldon\*, **J. Huang**, J. Dang, D. Fetzer, D. Manz, T. Morris, D. Wei, J. Kirsch, and S. Goose, "Using Semantic Web technologies to develop intrinsically resilient energy control systems," *Proc. 7<sup>th</sup> International Conference on Semantic Technologies for Intelligence, Defense, and Security (STIDS-12)*, Fairfax, VA, Oct. 2012.
  22. **J. Huang\***, J. Dang, X. Lu, D. Dou, J.A. Blake, W.T. Gerthoffer, and M. Tan, "An ontology-based microRNA knowledge sharing and acquisition framework," *Proc. 2012 BHI Workshop at IEEE International Conference on Bioinformatics and Biomedicine (BIBM-12)*, pp. 16-23, IEEE Computer Society Press, Philadelphia, PA, Oct. 2012.
  21. C. Townsend, **J. Huang\***, D. Dou, H. Liu, L. He, P.J. Hayes, R. Rudnick, H. Shah, D. Fell, and W. Liu, "NeuMORE: Ontology in stroke recovery," *Proc. IEEE International Conference on Bioinformatics & Biomedicine (BIBM-10)*, Hong Kong, China, Dec. 2010.
  20. C. Townsend, **J. Huang\***, D. Dou, H. Liu, L. He, P.J. Hayes, R. Rudnick, H. Shah, D. Fell, and W. Liu, "Ontology-based knowledge acquisition for neuromotor functional recovery in stroke," *Proc. KEDDH Workshop at IEEE International Conference on Bioinformatics & Biomedicine (BIBM-10)*, Hong Kong, China, Dec. 2010.

19. C. Townsend, **J. Huang\***, D. Dou, S. Dalvi, P.J. Hayes, L. He, W. Lin, H. Liu, R. Rudnick, H. Shah, H. Sun, X. Wang, and M. Tan, "OMIT: Domain ontology and knowledge acquisition in microRNA target prediction," *Proc. 9th International Conference on Ontologies, DataBases, and Applications of Semantics (ODBASE-10)*, pp. 1162-1169, Springer-Verlag, Crete, Greece, Oct. 2010.
18. **J. Huang\***, M. Tan, D. Dou, L. He, C. Townsend, R. Rudnick, and P. Hayes, "MiRNA ontology for target prediction in human cancer," *Proc. 1st ACM International Conference on Bioinformatics and Computational Biology (BCB-10)*, pp. 472-474, ACM Press, Niagara Falls, NY, Aug. 2010 (doi: 10.1145/1854776.1854861).
17. **J. Huang\***, D. Dou, L. He, J. Dang, and P. Hayes, "Ontology-based knowledge discovery and sharing in bioinformatics and medical informatics: A brief survey," *Proc. 7th International Conference on Fuzzy Systems and Knowledge Discovery (FSKD-10)*, Yantai, China, Aug. 2010.
16. **J. Huang\***, A. Yasinsac, and P. Hayes, "Knowledge sharing and reuse in digital forensics," *Proc. 4th International IEEE Workshop on Systematic Approaches to Digital Forensic Engineering (SADFE-10)*, Oakland, CA, May 2010.
15. **J. Huang\***, L. He, and G.V. Davidson-Shivers, "IWAS: Intelligent Web-based assessment system," *Proc. Society for Information Technology & Teacher Education (SITE-10)*, San Diego, CA, Mar. 2010.
14. J. Dang, **J. Huang**, and M.N. Huhns\*, "Workflow coordination for service-oriented multiagent systems," *Proc. 6th International Conference on Autonomous Agents and Multiagent Systems (AAMAS-07)*, Honolulu, Hawaii, May 2007.
13. **J. Huang**, J. Dang, J.M. Vidal, and M.N. Huhns\*, "Ontology matching using an artificial neural network to learn weights," *Proc. SWeCKa Workshop at International Joint Conferences on Artificial Intelligence (IJCAI-07)*, pp. 80-85, Hyderabad, India, Jan. 2007.
12. **J. Huang** and M.N. Huhns\*, "Superconcept formation system-an ontology matching algorithm for Web applications," *Supplemental Proc. 5th International Semantic Web Conference (ISWC-06)*, Athens, GA, Nov. 2006.
11. **J. Huang**, J. Dang, and M.N. Huhns\*, "Ontology reconciliation for service-oriented computing," *Proc. 2006 IEEE International Conference on Services Computing (SCC-06)*, pp. 3-10, Chicago, IL, Sept. 2006 (**2nd Place for Best Student Paper Award**).
10. **J. Huang** and M.N. Huhns\*, "An ontology matching algorithm for service discovery," *Proc. Service Discovery on the WWW Workshop at 1st Asian Semantic Web Conference (ASWC-06)*, Beijing, China, Sept. 2006.
9. **J. Huang**, J. Dang, and M.N. Huhns\*, "Reconciling ontologies for coordination among e-business agents," *Proc. BAsEWEB Workshop at International Conference on Autonomous Agents and Multiagent Systems (AAMAS-06)*, pp. 62-69, Hakodate, Japan, May 2006.
8. **J. Huang**, J. Dang, and M.N. Huhns\*, "Ontology reconciliation in e-business domain," presented



in *International Student Workshop on Agents (ISWA-06)*, Kyoto, Japan, May 2006.

7. **J. Huang**, R. Zavala, B. Mendoza, and M.N. Huhns\*, “A schema-based approach combined with inter-ontology reasoning to construct consensus ontologies,” *Proc. C&O Workshop at National Conference on Artificial Intelligence (AAAI-05)*, pp. 80-87, Pittsburgh, PA, July 2005.
6. **J. Huang**, R. Zavala, B. Mendoza, and M.N. Huhns\*, “Sharing ontology schema information for Web Service integration,” *Proc. 5th International Conference on Computer and Information Technology (CIT-05)*, pp. 1056-1062, Shanghai, China, Sept. 2005.
5. M.G. Valtorta\*, **J. Huang**, et al., “Extending Heuer’s analysis of competing hypotheses method to support complex decision analysis,” *Proc. 2005 International Conference on Intelligence Analysis Methods and Tools (IA-05)*, Washington D.C., May 2005.
4. J. Cheng\*, **J. Huang**, et al., “OmniSeer: A cognitive framework for user modeling, reuse of prior and tacit knowledge, and collaborative knowledge services,” *Proc. 38<sup>th</sup> Annual Hawaii International Conference on System Sciences (HICSS-38)-Track 9*, Big Island, Hawaii, Jan. 2005.
3. S. Xu\*, **J. Huang**, et al., “Security issues in privacy and key management protocols of 802.16,” *Proc. The Workshop of 2005 International Conference on Computational Intelligence and Security (CIS-05)*, Xi’an, China, Oct. 2005.

### Technical Reports

2. M.G. Valtorta\*, **J. Huang**, et al., “Tutorial and training manual for the prior and tacit knowledge system of OmniSeer,” Dec. 2003.
1. J. Cheng\*, **J. Huang**, et al., “OmniSeer Project Final Report,” Aug. 2004.

## COURSES TAUGHT

### At the University of South Alabama

- CSC 528: Bioinformatics (graduate level)
- CSC 428: Bioinformatics (undergraduate level)
- CSC 522: Performance Evaluation of Algorithms (graduate level)
- CSC 432: Performance Evaluation of Algorithms (undergraduate level)
- CSC 332: Advance Data Structures and Algorithms (undergraduate level)
- CSC 525: Complexity Theory (graduate level)
- CSC 434: Formal Language and Automata Theory (undergraduate level)
- CSC 516: Artificial Intelligence Theory and Programming (graduate level)
- CSC 416: Artificial Intelligence Theory and Programming (undergraduate level)
- CSC 533: Artificial Intelligence and Heuristic Programming (graduate level)
- CSC 513: Computer Graphics (graduate level)
- CSC 413: Computer Graphics (undergraduate level)
- CSC 511: Communications and Network Analysis (graduate level)
- CSC 411: Communications and Network Analysis (undergraduate level)
- CIS 210: Introduction to C++ Programming (undergraduate level)

### At Benedict College

- CSC 138: Algorithm Design and Programming II with C/C++ (undergraduate level)
- CSC 231: Assembly Language (undergraduate level)
- CSC 333: Data Structures (undergraduate level)
- CSC 431: Programming Languages (undergraduate level)
- CSC 434: Database Management (undergraduate level)
- CSC 435: Software Engineering (undergraduate level)
- CSC 436: Operating System (undergraduate level)

### **INVITED TALKS AND PRESENTATION**

21. “Semantics-oriented Data Science and Computational Life Sciences: innovative application of semantic technologies in microRNA and lncRNA research,” at *The 7<sup>th</sup> IEEE International Conference on Computational Advances in Bio and medical Sciences (ICCABS-17)*, Orlando, FL, October 2017.
20. “OmniSearch and Beyond: application of semantic technologies and bio-ontologies in non-coding RNA research,” at *Tsinghua University*, August 2017.
19. “Semantics-oriented Data Science and Computational Life Sciences,” at *Kent State University*, Kent, OH, April 2017.
18. “Advance Topics in Computational Genomics and Transcriptomics,” at *Fujian Agriculture and Forestry University*, December 2016.
17. “OmniSearch: an innovative semantic search system in human cancer research,” at *Qilu University of Technology*, Jinan, China, December 2015.
16. “Innovative Application of Semantics-oriented Computational Approaches in Biomedical and Clinical Investigation,” at *Kunming Medical University*, Kunming, China, July 2015.
15. “Semantic Annotation, Integration, and Search of Genomics Data,” at *International Conference on Big data analysis and Data Mining (ICBDM-15)*, Lexington, KY, May 2015.
14. “Semantics-oriented Knowledge Acquisition in Human Cancer Biology Research,” at *University of Connecticut*, Storrs, CT, March 2015.
13. “Semantics-oriented Knowledge Acquisition in Human Cancer Biology Research,” at *University of Utah*, Salt Lake City, UT, March 2015.
12. “Semantics-oriented Knowledge Acquisition in Human Cancer Biology Research,” at *University of Kansas*, Lawrence, KS, February 2015.
11. “Semantic Technologies and their Application in Biological and Biomedical Research,” at *Guizhou University*, Guiyan, China, January 2014.
10. “Overview of Semantic Technologies,” at *Shandong Yingcai University*, Jinan, China, December 2013.

9. “Ontology-based Knowledge Discovery and Sharing in Biological and Medical Research,” at the *Chinese University of Hong Kong*, August 2010.
8. “Towards Mutual Understanding: Ontologies, Ontology Matching, and their Applications,” at the *University of Oregon*, May 2010.
7. “Intelligent Web-based Educational Assessment System,” at *the University of South Alabama’s 17<sup>th</sup> Annual Research Forum*, Mobile, AL, March 2010.
6. “Semantic Integration Techniques and Component-based Software Engineering,” at *Southern Polytechnic State University*, September 2008.
5. “Ontology and Semantic Integration Algorithms,” at *Dali University*, Dali, China, July 2008.
4. “Ontology-matching Algorithms,” at *Oak Ridge National Lab*, Oak Ridge, TN, January 2007.
3. “Inferring, Validating, and Coordinating the Commitments in a Workflow,” presented at *2006 IEEE International Conference on Web Services (ICWS-06)*, Chicago, IL, September 2006.
2. “A Framework for Intelligent Web Services: Combined HTN and CSP Approach,” presented at *2006 IEEE International Conference on Web Services (ICWS-06)*, Chicago, IL, September 2006.
1. “Understanding Ontologies for Web Service Coordination,” in *the University of South Carolina Graduate Student Day*, Columbia, SC, March 2006.

## **PROFESSIONAL SERVICE**

### **Graduate Student Advisement** (Thesis Supervisor or Committee Member)

- David Reynolds, Ph.D. in Computer Science, expected to graduate in May 2021
- Shengyu Li, Ph.D. in Computer Science, expected to graduate in May 2020
- Mohan Vamsi Kasukurthi, MS in Computer Science, expected to graduate in December 2017
- Vikash Kumar Jha, MS in Computer Science, expected to graduate in December 2017
- Feihuang Liu, MS in Computer Science, graduated in May 2016
- He Zhang, MS in Computer Science, graduated in June 2015
- William Bush, MS in Computer Science, graduated in May 2015
- Xingyu Lu, MS in Computer Science, graduated in May 2015
- Moses M. Baldwin, MS in Computer Science, graduated in May 2013
- Nicolas Felts, MS in Computer Science, graduated in May 2013
- Valerian Kiame, MS in Computer Science, graduated in May 2011

### **Service at the University of South Alabama**

#### *University Level*

- Committee Member, USA Research and Scholarship Development Grant Program Review Committee (January 2015 - Present)

- Committee Member, USA Faculty Development Council (August 2014 - Present)
- Committee Member, USA Global Engagement Research Committee (January 2014 - Present)
- Committee Member, USA Council on International Education and Scholarship (August 2013 - Present)
- Committee Member, USA Stokes Center for Environmental Resiliency (January 2013 - Present)
- Committee Member, Educational Cooperation with Chinese institutions (August 2009 - December 2014)

#### *College Level*

- Committee Member, SoC Promotion and Tenure Committee (August 2017 - Present)
- Committee Chair, Student Academic Misconduct Committee (August 2015 - Present)
- Committee Member, CS Grad Comps Committee (August 2009 - Present)
- Committee Member, ITIS Faculty Recruiting Committee (August 2012 - May 2013)

#### *Department Level*

- Committee Member, CS Graduate Application Review Committee (January 2015 - Present)
- Committee Member, CS Graduate Research/Lab Assistantship Review Committee (January 2015 - Present)

#### **Community Service in Mobile Area**

- Guest Speaker, USA Computing Day (August 2013 - January 2015)
- Faculty Judge, Mobile Region Science and Engineering Fair for High School Students (January 2013 - May 2014)

#### **NSF Panelist**

1. NSF Postdoctoral Research Fellowships in Biology (PRFB) review panels, February 2015

#### **Journal Editorial Board Member**

6. The International Journal of Data Mining & Bioinformatics (IJDMB)
5. Gene and Genome Research (GGR)
4. The Scientific Pages of Microbiology (SPM)
3. The Journal of Computer Engineering & Information Technology (JCEIT)
2. MASAUM Journal of Engineering and Applied Sciences (MJEAS)
1. MASAUM Journal of Computer Sciences (MJCS)

#### **Journal Review Board Member**

2. The Scientific Pages of Artificial Intelligence
1. Journal of Open Research on Information Systems

### **Conference Steering Committee**

4. The 4th International Conference on Big Data Analysis and Data Mining (ICBDADM-17)
3. The 3<sup>rd</sup> International Conference on Big Data Analysis and Data Mining (ICBDADM-16)
2. The 2<sup>nd</sup> International Conference on Big Data Analysis and Data Mining (ICBDADM-15)
1. The 1<sup>st</sup> International Online Student Conference on Computer Science 2011 (IIOSSCS-11)

### **Conference and Workshop Chair/Co-Chair**

5. The 2<sup>nd</sup> International Workshop on Semantics-Powered Data Analytics (SEPDA-17)
4. OmniSearch and Beyond Workshop at the 7<sup>th</sup> International Conference on Biological Ontology (ICBO-16)
3. The 8<sup>th</sup> Annual Cyber Security and Information Intelligence Research Workshop (CSIIRW-12)
2. International Conference on Information Technology (ICIT-12)
1. AAMAS Workshop on Service-Oriented Computing (SOCASE-07)

### **Conference Session Chair**

3. 2016 IEEE International Conference on Bioinformatics and Biomedicine (BIBM-16)
2. 2015 IEEE International Conference on Bioinformatics and Biomedicine (BIBM-15)
1. 2006 IEEE International Conference on Services Computing (SCC-06)

### **Book Editorial Advisory Board**

2. Democratic Strategies and Citizen-Centered E-Government Services (by IGI Global)
1. Handbook on Research on E-Business Standards and Protocols: Documents, Data and Advanced Web Technologies (by IGI Global)

### **Invited Journal Editor**

2. Guest Editor for IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB), IEEE BIBM 2015 Special Issues
1. SciTechnol Journal

### **Invited Book Editor**

1. Bioinformatics in microRNA research: computational methods in exploring microRNAs' functions for "Methods in Molecular Biology" series (by Springer)

### **Journal Review**

20. Journal of Biomedical and Health Informatics
19. IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB)
18. Current Bioinformatics

17. Computers in Biology and Medicine
16. Bioinformatics
15. BMC Genomics
14. PLOS ONE
13. Gene Reports
12. Computers and Security Journal
11. IEEE Internet Computing
10. World Wide Web Journal (WWWJ)
9. IEEE Transactions on Knowledge and Data Engineering (TKDE)
8. IEEE Transactions on Services Computing (TSC)
7. Multimedia Tools and Applications (MTA)
6. International Journal of Information Management (IJIM)
5. Journal of Recent Patents on Biomedical Engineering (RPBE)
4. Computer Methods and Programs in Biomedicine (CMPB)
3. International Journal of Cooperative Information Systems (IJCIS)
2. Journal of Zhejiang University SCIENCE A (Applied Physics and Engineering)
1. Knowledge Engineering Review Journal (KER)

### **Invited Book Chapter Review**

1. Democratic Strategies and Citizen-Centered E-Government Services (by IGI Global)

### **Conference Program Committee**

71. 2017 IEEE International Conference on Bioinformatics and Biomedicine (BIBM-17)
70. The 10th International Conference on BioMedical Engineering and Informatics (BMEI-17)
69. The 10th International Congress on Image and Signal Processing (CISP-17)
68. The 29th IEEE International Conference on Tools with Artificial Intelligence (ICTAI-17)
67. The 17th IEEE International Conference on Computer and Information Technology (CIT-17)
66. The 9th International Conference on Bioinformatics and Biomedical Technology (ICBBT-17)
65. The 13th IEEE International Conference on Green Computing and Communications (GreenCom-17)
64. The 11th IEEE International Conference on Semantic Computing (ICSC-17)
63. The 16th IEEE International Conference on Computer and Information Technology (CIT-16)
62. The 28th IEEE International Conference on Tools with Artificial Intelligence (ICTAI-16)

61. 2016 IEEE International Conference on Bioinformatics and Biomedicine (BIBM-16)
60. The 10th IEEE International Conference on Semantic Computing (ICSC-16)
59. The 8th International Conference on Computational Collective Intelligence - Technologies and Applications (ICCCI-16)
58. The 9th International Conference on BioMedical Engineering and Informatics (BMEI-16)
57. The 9th International Congress on Image and Signal Processing (CISP-16)
56. 2015 IEEE International Conference on Bioinformatics and Biomedicine (BIBM-15)
55. The 7th International Conference on Computational Collective Intelligence - Technologies and Applications (ICCCI-15)
54. The 9th IEEE International Conference on Semantic Computing (ICSC-15)
53. The 8<sup>th</sup> International Conference on BioMedical Engineering and Informatics (BMEI-15)
52. The 8th International Congress on Image and Signal Processing (CISP-15)
51. The 15<sup>th</sup> IEEE International Conference on Computer and Information Technology (CIT-15)
50. The 6<sup>th</sup> International Conference on Computational Collective Intelligence-Technologies and Applications (ICCCI-14)
49. The 7<sup>th</sup> International Conference on BioMedical Engineering and Informatics (BMEI-14)
48. The 7<sup>th</sup> International Congress on Image and Signal Processing (CISP-14)
47. The 12<sup>th</sup> International Conference on Autonomous Agents and Multiagent Systems (AAMAS-13)
46. 2013 International Symposium on Applied Engineering, Technical Management, and Innovation (AETMI -13)
45. The 6<sup>th</sup> International Conference on BioMedical Engineering and Informatics (BMEI-13)
44. The 6<sup>th</sup> International Congress on Image and Signal Processing (CISP-13)
43. The 13<sup>th</sup> IEEE International Conference on Computer and Information Technology (CIT-13)
42. The 5<sup>th</sup> International Conference on Computational Collective Intelligence-Technologies and Applications (ICCCI-13)
41. The 5<sup>th</sup> International Conference on BioMedical Engineering and Informatics (BMEI-12)
40. The 5<sup>th</sup> International Congress on Image and Signal Processing (CISP-12)
39. The 4<sup>th</sup> Asian Conference on Intelligent Information and Database Systems (ACIIDS-12)
38. The 2012 International Conference on Computer, Communications, and Information Technology (ICCCIT-12)
37. The 4<sup>th</sup> International Conference on Computational Collective Intelligence-Technologies and Applications (ICCCI-12)
36. The 10<sup>th</sup> International Workshop on Data Mining in Bioinformatics (BIOKDD-11)

35. The 3<sup>rd</sup> International Conference on Computational Collective Intelligence-Technologies and Applications (ICCCI-11)
34. The 11<sup>th</sup> IEEE International Conference on Computer and Information Technology (CIT-11)
33. The 2011 IEEE International Conference on System Design and Data Processing (ICSDDP-11)
32. The 2<sup>nd</sup> International Conference on Networked Digital Technologies (NDT-10)
31. The 2<sup>nd</sup> International Symposium on Data processing, Privacy, and E-commerce (ISDPE-10)
30. The 10<sup>th</sup> IEEE International Conference on Computer and Information Technology (CIT-10)
29. 2010 International Conference on the Business and Digital Enterprises (ICBDE-10)
28. The 2<sup>nd</sup> International Conference on Computational Collective Intelligence (ICCCI-10)
27. IEEE International Conference on Advanced Information Networking and Applications (AINA-10)
26. The 8<sup>th</sup> International Conference on Autonomous Agents and Multiagent Systems (AAMAS-09)
25. The 4<sup>th</sup> International Workshop on Ontology Matching (OM-09)
24. The Conference of Software, Agents and Services for Business, Research, and E-Sciences (SABRE-09)
23. International Conference on Ontologies, Databases, and Applications of Semantics (ODBASE-09)
22. Symposium on Revision Calculus and Applications (RCA-09)
21. AAMAS Workshop on Service-Oriented Computing (SOCASE-09)
20. The 1<sup>st</sup> International Conference on Computational Collective Intelligence (ICCCI-09)
19. IEEE International Conference on Advanced Information Networking and Applications (AINA-09)
18. 2009 IEEE International Conference on Computer and Information Technology (CIT-09)
17. International Workshop on Intelligent Service Management (ISM-09)
16. International Workshop on Intelligent Services and Process Management (ISPM-08)
15. The 6<sup>th</sup> International Conference on Service Oriented Computing (ICSOC-08)
14. International Workshop on Agents and Web Services in Distributed Environments (AWeSOMe-08)
13. The 4<sup>th</sup> International Workshop on Contexts and Ontologies (CandO-08)
12. AAMAS Workshop on Service-Oriented Computing (SOCASE-08)
11. OnTheMove to Meaningful Internet Systems and Ubiquitous Computing (OTM-08)
10. International Conference on Ontologies, Databases, and Applications of Semantics (ODBASE-08)



9. 2008 IEEE International Conference on Computer and Information Technology (CIT-08)
8. The 6<sup>th</sup> International Conference on Autonomous Agents and Multiagent Systems (AAMAS-07)
7. The 2<sup>nd</sup> International Workshop on Ontology Matching (OM-07)
6. 2007 IEEE International Conference on Computer and Information Technology (CIT-07)
5. The 4<sup>th</sup> International Conference on Grid Service Engineering and Management (GSEM-07)
4. International Workshop on Agents and Web Services in Distributed Environments (AWeSOMe-07)
3. The 1<sup>st</sup> IEEE International Conference on Engineering of Intelligent Systems (ICEIS-06)
2. The 2<sup>nd</sup> International Workshop on Agents, Web Services, and Ontologies (AWeSOMe-06)
1. The 1<sup>st</sup> International Workshop on Ontology Matching (OM-06)

### **Conference Technical Review**

9. The 7<sup>th</sup> IEEE International Conference on Computational Advances in Bio and medical Sciences (ICCABS-17)
8. The 7<sup>th</sup> International Conference on Fuzzy Systems and Knowledge Discovery (FSKD-10)
7. The 22<sup>nd</sup> International Conference on Industrial, Engineering & Other Applications of Applied Intelligent Systems (IEA/AIE-09)
6. The 15<sup>th</sup> International Conference on Cooperative Information Systems (CoopIS-07)
5. 2006 IEEE International Conference on Services Computing (SCC-06)
4. 2006 IEEE International Conference on Computer and Information Technology (CIT-06)
3. 2006 Canadian Semantic Web Working Symposium
2. The 13<sup>th</sup> International Conference on Cooperative Information Systems (CoopIS-05)
1. The 1<sup>st</sup> Intl' WS on Service-Oriented Application, Integration, and Collaboration (SOAIC-05)

### **Other Technical Review**

2. Electronic Business Interoperability: Concepts, Opportunities, and Challenges
1. Handbook of Ontologies for Business Interaction

## HONORS AND AWARDS

<b>2<sup>nd</sup> Place for Best Student Paper Award</b> at 2006 IEEE International Conference on Services Computing (SCC-06)	2006
AAAI Scholarship	2005, 2006
USC Graduate School Dean's Travel Award	2005, 2006

## AFFILIATIONS

Full Member, Sigma Xi, the Scientific Research Society (inducted 2007)

## HOBBIES

**Soccer:** play pick-up games twice a week

**Weight-lifting:** have regular training several times per week

**Poke:** one of the best players on "80 grade" (a traditional Chinese poker game)

**Movies:** all different types, especially the action movies

**Music:** mostly popular music, but sometimes pretend to enjoy classical music

## REFERENCES

(upon request)