

Chair Professor Zhang Du

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Academic Qualification

Ph.D. in Computer Science, University of Illinois, USA

MS in Computer Science, Nanjing University, China

Teaching Area

Machine Learning, Artificial Intelligence, Operating System Principles,
Knowledge-based Systems.

Research Area

STEP perpetual learning, knowledge-based systems,
big data analytics, and software engineering.

Working Experience

Department Chair, California State University, Sacramento, 2004 - 2010

Visiting Professor, Hong Kong Polytechnic University, Sept. 2008 - Jan. 2009

Visiting Professor, Naval Postgraduate School, Sept. - Dec. 2000; Jan. - May 1995

Visiting Professor, University of Minnesota, Minneapolis, Sept. - Dec. 1994

Professor, Department of Computer Science, California State University, Sacramento, 1993-2015

Assistant/Associate Professor, Department of Computer Science, California State University, Sacramento, 1987-1993

Selected Journal Papers

Jinxiang Zeng, **Du Zhang**, Zhiyi Li, and Xiaolin Li, "Semi-supervised Training of Transformer and Causal Dilated Convolution Network with Applications to Topic Classification," *Applied Sciences*, Vol.11, 5712, 2021. doi: 10.3390/app11125712.

Zhiyi Li, Xiaomian Xu, **Du Zhang** and Peng Zhang, "Cross-Model Hashing Retrieval based on Deep Residual Network," *Computer Systems Science and Engineering*, Vol.36, No.2, 2021, pp.383-405. doi: 10.32604/csse.2021.014563

H. Qin and Du Zhang, "A Perpetual Learning Algorithm that Incrementally Improves Performance with Deliberation," *IEEE Access*, Vol. 8, 2020, pp.131425-131438, doi: 10.1109/ACCESS.2020.3009718.

H. Qin, **Du Zhang**, X. Sun, J.Tang and J. Peng, "An Efficient Perpetual Learning Algorithm," *International Journal on Artificial Intelligence Tools*, Vol. 28, No. 7, 2019, pp.1950022-1 – 1950022-23, doi: 10.1142/S0218213019500222.

É. Grégoire, Y. Izza, and **Du Zhang**, "On admissible consensus," *International Journal on Artificial Intelligence Tools*, Vol.27, No.1, 2018, pp.1-20.

É. Grégoire, J-M. Lagniez, and Du Zhang, "Consensus-finding that preserves mutually conflicting hypothetical information from a same agent," *AI Communications*, Vol.31, No.3, 2018, pp.303-317

Ning Xu, Yunzhou Zhang, **Du Zhang**, Shuying Zhao, and Wenyan Fu. "Moving Target Tracking in Three Dimensional Space with Wireless Sensor Network," *Wireless Personal Communications*, 94 (4), 2017, pp.3403-3413.

K.B. Zhang, M.A. Orgun, R. Shankaran, and **Du Zhang**, "Classifying High Dimensional Data by Interactive Visual Analysis," *Journal of Visual Languages and Computing*, Vol.33, April 2016, pp.24-36.

Du Zhang, "Granularities and Inconsistencies in Big Data Analysis," *International Journal of Software Engineering and Knowledge Engineering*, Vol.23, No.6, 2013, pp.887-893.

Du Zhang and É. Grégoire, "The Landscape of Inconsistency: A Perspective," *International Journal of Semantic Computing*, Vol. 5, No. 3, September 2011, pp.235-256.

É. Grégoire and **Du Zhang**, "A Framework for Handling Logical Inconsistencies in the Fusion of Boolean Knowledge Bases," *International Journal of Semantic Computing*, Vol. 5, No. 3, September 2011, pp.323-334.

Selected Conference Papers

- Jun Peng, Wu Yang, Shangzhu Jin, Shaoning Pang, Dedong Tang, Junjie Bai and Du Zhang, "Image Encryption based on Fractional-order Chen Hyperchaotic System," the Proceedings of the Fifteenth IEEE Conference on Industrial Electronics & Applications, Kristiansand, Norway, November 2020, pp.213-217.
- Yingxu Wang, Kostas N. Plataniotis, Jane Z. Wang, Ming Hou, Mengchu Zhou, Newton Howard, Jun Peng, Runhe Hwang, Shushma Patel and **Du Zhang**, "The Cognitive and Mathematical Foundations of Analytic Epidemiology," the Proceedings of the *Nineteenth IEEE International Conference on Cognitive Informatics & Cognitive Computing*, Beijing, China, Sept. 26-28, 2020, pp.6-14 (Best Paper Award).
- Jun Peng, Shaoning Pang, **Du Zhang**, Shangzhu Jin, Lixiao Feng and Zuojin Li, "S-boxes Construction Based on Quantum Chaos and PWLCM Chaotic Mapping," the Proceedings of the *Eighteenth IEEE International Conference on Cognitive Informatics & Cognitive Computing*, Milan, Italy, July 2019, pp.293-298.
- Du Zhang**, "From One-off Machine Learning to Perpetual Learning: A STEP Perspective," the Proceedings of the *2018 IEEE International Conference on Systems, Man and Cybernetics*, Miyazaki, Japan, October 2018, pp. 17-23.
- J.H. Tang and **Du Zhang**, "SmartCalendar: Improving Scheduling through Overcoming Temporal Inconsistencies," the Proceedings of the *Seventeenth IEEE International Conference on Cognitive Informatics & Cognitive Computing*, Berkeley, CA, USA, July 2018, pp. 30-37.
- X.B. Sun, **Du Zhang**, M. Liu, Z. He, H. Li and J. Li, "Detecting and Resolving Inconsistencies in Snort," the Proceedings of the *Seventeenth IEEE International Conference on Cognitive Informatics & Cognitive Computing*, Berkeley, CA, USA, July 2018, pp. 552-560.
- Du Zhang** and É. Grégoire, "Learning through Overcoming Inconsistencies," the 1st International Workshop on Consistency and Inconsistency, the Proceedings of the *Twenty-Seventh International Workshop on Database and Expert Systems Applications (DEXA 2016)*, IEEE Computer Society CPS, Porto, Portugal, Sept., 2016, pp. 121-128.
- É. Grégoire, Jean-Marie Lagniez and **Du Zhang**, "On Computing Non-Hypocritical Consensuses," the 1st International Workshop on Consistency and Inconsistency, the Proceedings of the *Twenty-Seventh International Workshop on Database and Expert Systems Applications (DEXA 2016)*, IEEE Computer Society CPS, Porto, Portugal, Sept., 2016, pp. 97-101.
- É. Grégoire, Jean-Marie Lagniez and **Du Zhang**, "Logical Consensuses for Case-based Reasoning and for Mathematical Engineering of AI," the Proceedings of the *Fifteenth IEEE International Conference on Cognitive Informatics & Cognitive Computing*, Stanford, USA, August 2016, pp. 29-33.
- Du Zhang**, "Learning through Overcoming Temporal Inconsistencies," the Proceedings of the *Fourteenth IEEE International Conference on Cognitive Informatics & Cognitive Computing*, Beijing, China, July 2015, pp. 141-148.
- Jose Andres Bolaños Perera, **Du Zhang** and Meiliu Lu, "Smart Maps through Semantic Web, Social Media and Sentiment Analysis," the Proceedings of the *Sixteenth IEEE International Conference on Information Reuse and Integration*, San Francisco Bay, CA, August 2015, pp. 49-56.
- T. Le and **Du Zhang**, "DBLPMiner: A Tool for Exploring Bibliographic Data," the Proceedings of the *Sixteenth IEEE International Conference on Information Reuse and Integration*, San Francisco Bay, CA, August 2015, pp. 435-442.
- Kathy Applebaum and **Du Zhang**, "Classifying Galaxy Images through Support Vector Machines," the Proceedings of the *Sixteenth IEEE International Conference on Information Reuse and Integration*, San Francisco Bay, CA, August 2015, pp. 357-363.
- Du Zhang**, "Learning through Explaining Observed Inconsistencies," the Proceedings of the *Thirteenth IEEE International Conference on Cognitive Informatics & Cognitive Computing*, London, UK, August, 2014, pp.133-139.
- Y. Zhang and **Du Zhang**, "Automatically Predicting the Helpfulness of Online Reviews," the Proceedings of the *Fifteenth IEEE International Conference on Information Reuse and Integration*, San Francisco Bay, CA, August 2014, pp.662-668.
- Du Zhang**, L. Jujavarapu, and M. Lu "Detecting and Resolving Inconsistencies in Firewalls," the Proceedings of the *Fifteenth IEEE International Conference on Information Reuse and Integration*, San Francisco Bay, CA, August 2014, pp.1-7.
- Du Zhang**, "Perpetual Learning through Overcoming Inconsistencies," the Proceedings of the *Twenty-fifth IEEE International Conference on Tools with AI*, Washington DC, November, 2013, pp.872-879.
- Du Zhang**, "Learning through Overcoming Incompatible and Anti-subsumption Inconsistencies," the Proceedings of the *Twelfth IEEE International Conference on Cognitive Informatics & Cognitive Computing*, New York City, NY, July, 2013, pp.137-142.
- Du Zhang**, "Inconsistencies in Big Data," the Proceedings of the *Twelfth IEEE International Conference on Cognitive Informatics & Cognitive Computing*, New York City, NY, July, 2013, pp.61-67.
- R. Carreras and **Du Zhang**, "A Machine Learning Based File Archival Tool," Proceedings of 25th *International Conference on Software Engineering and Knowledge Engineering*, June 2013, pp.73-76.

S. R. Pedditi, **Du Zhang** and C. Wang, "FIEP: An Initial Design of Firewall Information Exchange Protocol," the Proceedings of the *Fourteenth IEEE International Conference on Information Reuse and Integration*, San Francisco Bay, CA, August 2013, pp.1-5.

K.B. Zhang, M. Orgun, R. Shankaran, and **Du Zhang**, "Interactive Visual Classification of Multivariate Data," the Proceedings of the *Eleventh IEEE International Conference on Machine Learning and Applications*, December 2012, pp.246-251.

K.B. Zhang, M. Orgun, R. Shankaran, and **Du Zhang**, "A Visual Approach for Classification Based on Data Projection," the Proceedings of the *Twelfth Pacific Rim International Conference on Artificial Intelligence (PRICAI)*, Kuching, Malaysia, September, 2012, pp.850-856.

Du Zhang and M. Lu, "Learning through Overcoming Inheritance Inconsistencies," the Proceedings of the *Thirteenth IEEE International Conference on Information Reuse and Integration*, Las Vegas, NV, August 2012, pp.201-206.

Du Zhang, "i²Learning: Perpetual Learning through Bias Shifting," the Proceedings of the *Twenty-fourth International Conference on Software Engineering and Knowledge Engineering*, July 2012, pp. 249-255 (First Place Award as the outstanding paper).

Du Zhang, "From Bounded Rationality to Bounded Social Rationality," the Proceedings of the *Eleventh IEEE International Conference on Cognitive Informatics*, Kyoto, Japan, August 2012.

Du Zhang and M. Orgun, "BRINK: A Theory on Bounded Rationality and Inconsistent Knowledge," the Proceedings of the *Eleventh IEEE International Conference on Cognitive Informatics & Cognitive Computing*, Kyoto, Japan, August 2012, pp. 18-26.

B. Bell, B. Wallace, and **Du Zhang**, "Forecasting River Runoff through Support Vector Machines," the Proceedings of the *Eleventh IEEE International Conference on Cognitive Informatics*, Kyoto, Japan, August 2012, pp. 58-64.

Du Zhang, "Inconsistency in Multi-Agent Systems," in *Foundations of Intelligent Systems, Advances in Intelligent and Soft Computing* Vol. 122 (AISC 122), Y. Wang and T. Li (eds.) Springer-Verlag (the Proceedings of the *Sixth International Conference on Intelligent Systems and Knowledge Engineering*, Shanghai, China, December 15-17, 2011), pp.401-412.

Du Zhang, "Inconsistency-Induced Heuristics for Problem Solving," the Proceedings of the *Twenty Third International Conference on Software Engineering and Knowledge Engineering*, Miami FL, July 2011, pp.137-142.

Du Zhang and M. Lu, "Inconsistency-Induced Learning: A Step Toward Perpetual Learners," the Proceedings of the *Tenth IEEE International Conference on Cognitive Informatics*, Banff, Canada, August 2011, pp.59-66.

Du Zhang, "Bounded Rationality and Inconsistency," the Proceedings of the *Tenth IEEE International Conference on Cognitive Informatics*, Banff, Canada, August 2011, pp.17-22.

J. Peng, **Du Zhang**, and X. Liao, "A Method for Designing Dynamical S-boxes Based on Hyperchaotic Lorenz System," the Proceedings of the *Tenth IEEE International Conference on Cognitive Informatics*, Banff, Canada, August 2011, pp.304-309.

R. Malpani, M. Lu, **Du Zhang**, and W. K. Sung, "Mining Transcriptional Association Rules from Breast Cancer Profile Data," the Proceedings of the *Twelveth IEEE International Conference on Information Reuse and Integration*, Las Vegas, NV, August 2011, pp.154-159.

Professional Society Membership

Senior member, Association for Computing Machinery (ACM).

Senior Member, IEEE.