Boyang "Albert" Li, Ph.D.

CONTACT INFORMATION

College of Computing and Data Science,
Nanyang Technological University,
Block N4, Level 2, Room A-05,
50 Nanyang Avenue,
Singapore, 639798

boyang.li@ntu.edu.sg

http://boyangli.org

EDUCATION

Georgia Institute of Technology, Atlanta, GA

Ph.D., Computer Science, May 2015

- Dissertation: *Learning Knowledge to Support Domain-Independent Narrative Intelligence*
- Advisor: Dr. Mark O. Riedl

Nanyang Technological University, Singapore

B.E., Computer Engineering, June 2008

- First-Class Honors, Minor in Business

PROFESSIONAL EXPERIENCES

Associate Professor (Tenured) — Sep '24 to Present
Nanyang Associate Professor (Tenure-track) — Apr '21 to Sep '24
Associate Professor (Tenure-track) — Nov '20 to Apr '21
College of Computing and Data Science,
Nanyang Technological University,
Singapore

Visiting Scientist — Nov '19 to Nov '20
Alibaba-NTU Joint Research Institute,
Singapore

Senior Research Scientist — Jul '18 to Oct '19
Baidu Research,
Sunnyvale, CA

Senior Research Scientist — Jan '18 to Jul '18
Liulishuo (LingoChamp) Silicon Valley AI Lab,
San Mateo, CA

Research Scientist — Jun '15 to Dec '17
Disney Research, Pittsburgh, PA

Post-Doctoral Researcher — Jan '15–Jun '15
Disney Research, Pittsburgh, PA

Graduate Research Assistant — Aug '09–Dec '14
School of Interactive Computing,
Georgia Institute of Technology, Atlanta, GA

AI Consultant — Jun–Aug '11, May–Aug '10
Walt Disney Imagineering, via Caseworks LLC

Research Assistant — Jun '08–May '09
School of Computer Engineering,
Nanyang Technological University, Singapore
Supervisor: Dr. Chunyan Miao

Programmer — Jan-Jun '07
Philips Electronics, Singapore

Refereed Journal Publications

1. Tong Zhang, X. Jesse Yang, and **Boyang Li**. May I Ask a Follow-up Question? Understanding the Benefits of Conversations in Neural Network Explainability. *International Journal of Human-Computer Interaction*. 2024.

2. Jiayun Luo, **Boyang Li**, and Cyril Leung. A Survey of Computer Vision Technologies in Urban and Controlled-environment Agriculture. *ACM Computing Surveys*, 56 (5):1–39. 2023.

3. Anthony Meng Huat Tiong, Junnan Li, Guosheng Lin, **Boyang Li**, Caiming Xiong, and Steven C.H. Hoi. Improving Tail-Class Representation with Centroid Contrastive Learning. *Pattern Recognition Letters*. 2023.

4. Siwei Feng, **Boyang Li**, Han Yu, Yang Liu, and Qiang Yang. Semi-Supervised Federated Heterogeneous Transfer Learning. *Knowledge-Based Systems*. 252. 2022.

5. Wang Hao, **Boyang Li**, Haoming Zhong, Ahong Xu, Yingjie Huang, Jingfu Zou, Yuanyuan Chen, Pengcheng Wu, Yiqiang Chen, Cyril Leung, and Chunyan Miao. Smart Decision-Support System for Pig Farming. *Drones*. 6 (12). 2022.

6. Xu Guo, Han Yu, **Boyang Li**, Hao Wang, Pengwei Xing, Siwei Feng, Zaiqing Nie, and Chunyan Miao. Federated learning for personalized humor recognition. *ACM Transactions on Intelligent Systems and Technology*. 13(4):1–18. 2022.

7. Yuan Liu, Yixiao Lan, **Boyang Li**, Chunyan Miao, and Zhihong Tian. Proof of Learning (PoLe): Empowering neural network training with consensus building on blockchains. *Computer Networks*, 201. 2021.

8. Adam Noack, Isaac Ahern, Dejing Dou, and **Boyang Li**. An Empirical Study on the Relation between Network Interpretability and Adversarial Robustness. *Springer Nature Computer Science*, 2(32). 2021.

9. Guoyun Tu, Yanwei Fu, **Boyang Li**, Jiarui Gao, Yu-Gang Jiang, and Xiangyang Xue. A Multi-task Neural Approach for Emotion Attribution, Classification and Summarization. *IEEE Transaction on Multimedia*. 2019.

10. Ng Annalyn, Maarten Bos, Leonid Sigal, **Boyang Li**. Predicting Personality from Book Preferences with User-Generated Content Labels. *IEEE Transaction on Affective Computing*. 2018.

11. Baohan Xu, Yanwei Fu, Yu-Gang Jiang, **Boyang Li**, and Leonid Sigal. Heterogeneous Knowledge Transfer in Video Emotion Recognition, Attribution and Summarization. *IEEE Transaction on Affective Computing*. 2016.

12. **Boyang Li**. Humor: A Dynamic and Dual-Process Theory with Computational Considerations. *Advances in Cognitive Systems*, 4:57–74, 2016.

13. Jun Ji, Han Yu, **Boyang Li**, Huiguo Zhang. Learning Chinese Characters with Gestures. *International Journal of Information Technology*. 19(1), 2013.

14. **Boyang Li**, Stephen Lee-Urban, D. Scott Appling and Mark O. Riedl. Crowdsourcing Narrative Intelligence. *Advances in Cognitive Systems*. 2:25–42, 2012.

15. Yundong Cai, Chunyan Miao, Ah-Hwee Tan, Zhiqi Shen, and **Boyang Li**, Creating an Immersive Game World with Evolutionary Fuzzy Cognitive Maps, *IEEE Computer Graphics and Applications*, 30(2):58–70, 2010.

Refereed Full Conference Publications

1. Jaewoo Lee, **Boyang Li**, and Sung Ju Hwang. Concept-skill Transferability-based Data Selection for Large Vision-Language Models. *The Conference on Empirical Methods in Natural Language Processing (EMNLP)*. 2024.

2. Yidan Sun, Jianfei Yu, and **Boyang Li**. Multilingual Synopses of Movie Narratives: A Dataset for Vision-Language Story Understanding. *Findings of the Conference on Empirical Methods in Natural Language Processing (EMNLP Findings)*. 2024.

3. Devaansh Gupta and **Boyang Li**. A Training Data Recipe to Accelerate A* Search with Large Language Models. *Findings of the Conference on Empirical Methods in Natural Language Processing (EMNLP Findings)*. 2024.

4. Miaoyu Li, Haoxin Li, Zilin Du, and **Boyang Li**. Diversify, Rationalize, and Combine: Ensembling Multiple QA Strategies for Zero-shot Knowledge-based VQA. *Findings of the Conference on Empirical Methods in Natural Language Processing (EMNLP Findings)*. 2024.

5. Xu Guo, Zilin Du, **Boyang Li**, and Chunyan Miao. Generating Synthetic Datasets for Few-shot Prompt Tuning. *The First Conference on Language Modeling (COLM)*. 2024.

6. Yidan Sun, Qin Chao, and **Boyang Li**. Event Causality Is Key to Computational Story Understanding. *The 2024 Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL)*. 2024.

7. Anthony Tiong, Junqi Zhao, **Boyang Li**, Junnan Li, Steven Hoi, and Caiming Xiong. What Are We Measuring When We Evaluate Large Vision-Language Models? An Analysis of Latent Factors and Biases. *The 2024 Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL)*. 2024.

8. Jiayun Luo, Siddhesh Khandelwal, Leonid Sigal, and **Boyang Li**. Emergent Open-Vocabulary Semantic Segmentation from Off-the-shelf Vision-Language Models. *The IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*. 2024.

9. Yubin Xiao, Di Wang, **Boyang Li**, Mingzhao Wang, Xuan Wu, Changliang Zhou, You Zhou. Distilling Autoregressive Models to Obtain High-Performance Non-Autoregressive Solvers for Vehicle Routing Problems with Faster Inference Speed. *The 35th AAAI Conference on Artificial Intelligence (AAAI)*. 2024.

10. Wenliang Dai, Junnan Li, Dongxu Li, Anthony Meng Huat Tiong, Junqi Zhao, Weisheng Wang, **Boyang Li**, Pascale Fung, and Steven Hoi. InstructBLIP: Towards General-purpose Vision-Language Models with Instruction Tuning. *Advances in Neural Information Processing Systems (NeurIPS)*. 2023.

11. Zilin Du, Yunxin Li, Xu Guo, Yidan Sun, and **Boyang Li**. Training Multimedia Event Extraction With Generated Images and Captions. *The ACM International Conference on Multimedia (ACM MM)*. 2023.

12. Haoxin Li, Yuan Liu, Hanwang Zhang, and **Boyang Li**. Mitigating and Evaluating Static Bias of Action Representations in the Background and the Foreground. *International Conference on Computer Vision (ICCV)* **(Oral Presentation)**. 2023.

13. Bosheng Ding, Chengwei Qin, Linlin Liu, Yew Ken Chia, **Boyang Li**, Shafiq Joty, and Lidong Bing. Is GPT-3 a Good Data Annotator? *The Annual Conference of the Association for Computational Linguistics (ACL)*. 2023.

14. Qin Chao, Eunsoo Kim, and **Boyang Li**. Movie Box Office Prediction With Self-Supervised and Visually Grounded Pretraining. *IEEE International Conference on Multimedia and Expo (ICME)*. 2023.

15. Jiaxian Guo, Junnan Li, Dongxu Li, Anthony Meng Huat Tiong, **Boyang Li**, Dacheng Tao, and Steven CH Hoi. From Images to Textual Prompts: Zero-shot VQA with Frozen Large Language Models. *The IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*. 2023.

16. Anthony Meng Huat Tiong, Junnan Li, **Boyang Li**, Silvio Savarese, and Steven C.H. Hoi. Plug-and-Play VQA: Zero-shot VQA by Conjoining Large Pretrained Models with Zero Training. *Findings of the Conference on Empirical Methods in Natural Language Processing (Findings of EMNLP)*. 2022.

17. Xu Guo, **Boyang Li**, and Han Yu. Improving the Sample Efficiency of Prompt Tuning with Domain Adaptation. *Findings of the Conference on Empirical Methods in Natural Language Processing (Findings of EMNLP)*. 2022.

18. Tong Zhang, Yong Liu, **Boyang Li**, Zhiwei Zeng, Pengwei Wang, Yuan You, Chunyan Miao, and Lizhen Cui. History-Aware Hierarchical Transformer for Multi-session Open-domain Dialogue System. *Findings of the Conference on Empirical Methods in Natural Language Processing (Findings of EMNLP)*. 2022.

19. Jun Chen, Han Guo, Kai Yi, **Boyang Li**, and Mohamed Elhoseiny. VisualGPT: Data-efficient Adaptation of Pretrained Language Models for Image Captioning. *The IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*. 2022.

20. Sherif Abdelkarim, Aniket Agarwal, Panos Achlioptas, Jun Chen, Jiaji Huang, **Boyang Li**, Kenneth Church, and Mohamed Elhoseiny. Exploring Long Tail Visual Relationship Recognition with Large Vocabulary. *International Conference on Computer Vision (ICCV)*. 2021.

21. Yinan Zhang, **Boyang Li**, Yong Liu, Hao Wang, Chunyan Miao. Initialization Matters: Regularizing Manifold-informed Initialization for Neural Recommendation Systems. *ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)*. 2021.

22. Xu Guo, **Boyang Li**, Han Yu, and Chunyan Miao. Latent-Optimized Adversarial Neural Transfer for Sarcasm Detection. *The Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL*. 2021.

23. Chang Liu, Han Yu, **Boyang Li**, Zhiqi Shen, Zhanning Gao, Peiran Ren, Xuansong Xie, Lizhen Cui, and Chunyan Miao. Noise-resistant Deep Metric Learning with Ranking-based Instance Selection. *The IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*. 2021.

24. Yuanyuan Chen, **Boyang Li**, Han Yu, Pengcheng Wu, and Chunyan Miao. HyDRA: Hypergradient Data Relevance Analysis for Interpreting Deep Neural Networks. *The 35th AAAI Conference on Artificial Intelligence (AAAI)*. Virtual Conference. 2021.

25. Jianan Wang, **Boyang Li**, Xiangyu Fan, Jing Lin, and Yanwei Fu. Data-efficient Alignment of Multimodal Sequences by Aligning Gradient Updates and Internal Feature Distributions. *The IEEE Winter Conference on Applications of Computer Vision (WACV)*. Virtual Conference. 2021.

26. Huijuan Xu, **Boyang Li**, Vasili Ramanishka, Leonid Sigal, Kate Saenko. Joint Event Detection and Description in Continuous Video Streams. *The IEEE Winter Conference on Applications of Computer Vision (WACV)*. 2019.

27. Hannah Kim, Denys Katerenchuk, Daniel Billet, Jun Huan, Haesun Park, **Boyang Li**. Understanding Actors and Evaluating Personae with Gaussian Embeddings. *The 33rd AAAI Conference on Artificial Intelligence*. Honolulu, Hawaii. 2019.

28. Pelin Dogan, **Boyang Li**, Leonid Sigal, Markus Gross. LSTM stack-based Neural Multi-sequence Alignment TeCHnique (NeuMATCH). *The Conference on Computer Vision and Pattern Recognition (CVPR)*. Salt Lake City, Utah. 2018. Spotlight Presentation .

29. **Boyang Li**, Beth Cardier, Tong Wang and Florian Metze. Annotating High-Level Structures of Short Stories and Personal Anecdotes. *The 11th Language Resources and Evaluation Conference (LREC)*. Miyazaki, Japan. 2018.

30. Sasha Azad, Jingyang Xu, Haining Yu and **Boyang Li**. Scheduling Live Interactive Narratives with Mixed-Integer Linear Programming. *The 13th AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment (AIIDE)*. Snowbird, Utah. 2017.

31. James Kennedy, Iolanda Leite, Andre Pereira, Ming Sun, **Boyang Li**, Rishub Jain, Ricson Cheng, Eli Pincus, Elizabeth Carter and Jill Fain Lehman. Learning and Reusing Dialog for Repeated Interactions with a Situated Social Agent. *the 17th International Conference on Intelligent Virtual Agents (IVA)*. Stockholm, Sweden. 2017.

32. Tong Wang, Ping Chen, and **Boyang Li**. Predicting the Quality of Short Narratives from Social Media. *the 26th International Joint Conference on Artificial Intel-ligence (IJCAI)*. Melbourne, Australia. 2017.

33. Matthew Guzdial, **Boyang Li**, and Mark O. Riedl. Game Engine Learning from Video. *the 26th International Joint Conference on Artificial Intelligence (IJCAI)*. Melbourne, Australia. 2017.

34. Ming Sun, Iolanda Leite, Jill Fain Lehman, and **Boyang Li**. Collaborative Storytelling between Robot and Child: A Feasibility Study. *the 16th ACM SIGCHI Interaction Design and Children Conference*. Stanford, CA. 2017.

35. Iolanda Leite, André Pereira, Allison Funkhouser, **Boyang Li**, and Jill Fain Lehman. Semi-situated Learning of Verbal and Nonverbal Content for Repeated Human-Robot Interaction. *the 18th ACM International Conference on Multimodal Interaction*. Tokyo, Japan. 2016.

36. Rogelio Cardona-Rivera and **Boyang Li**. PlotShot: Generating Discourse-constrained Stories around Photos. *the 12th AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment*. Burlingame, CA. 2016.

37. Baohan Xu, Yanwei Fu, Yu-Gang Jiang, **Boyang Li** and Leonid Sigal. Video Emotion Recognition with Transferred Deep Feature Encodings. *the 2016 ACM International Conference in Multimedia Retrieval*. New York, NY. 2016.

38. Yi Luan, Yangfeng Ji, Hannaneh Hajishirzi, and **Boyang Li**. Multiplicative Representations for Unsupervised Semantic Role Induction. *the 54th Annual Meeting of the Association for Computational Linguistics, Short Papers*. Berlin, Germany. 2016.

39. **Boyang Li**. A Dynamic and Dual-Process Theory of Humor. *the 3rd Annual Conference on Advances in Cognitive Systems*. Atlanta, GA. 2015.

40. Matthew Guzdial, Brent Harrison, **Boyang Li**, and Mark O. Riedl. Crowdsourcing Open Interactive Narrative. *the 10th International Conference on the Founda-tions of Digital Games*. Pacific Grove, CA. 2015.

41. **Boyang Li**, Mohini Thakkar, Yijie Wang, and Mark O. Riedl. Data-Driven Storytelling Agents with Adjustable Personal Traits and Sentiments. *the 14th International Conference on Intelligent Virtual Agents*. Boston, MA, 2014.

42. **Boyang Li**, Mohini Thakkar, Yijie Wang and Mark O. Riedl. Storytelling with Adjustable Narrator Style and Sentiments. *the 7th International Conference on Interactive Digital Storytelling*. Singapore. 2014.

43. **Boyang Li**, Stephen Lee-Urban, George Johnston, and Mark O. Riedl. Story Generation with Crowdsourced Plot Graphs. *the 27th AAAI Conference on Artificial Intelligence*. Bellevue, Washington. 2013.

44. **Boyang Li**, Stephen Lee-Urban, and Mark O. Riedl. Crowdsourcing Interactive Fiction Games. *the 8th International Conference on the Foundations of Digital Games*, Chania, Greece, 2013.

45. **Boyang Li**, Alexander Zook, Nicholas Davis, and Mark O. Riedl. Goal-Driven Conceptual Blending: A Computational Approach for Creativity. *the 3rd International Conference on Computational Creativity*. Dublin, Ireland. 2012.

46. Mark O. Riedl, **Boyang Li**, Hua Ai, and Ashwin Ram. Robust and Authorable Multiplayer Interactive Narrative Experiences. *the 7th Annual Conference on Artificial Intelligence and Interactive Digital Entertainment*. Palo Alto, CA, 2011.

47. **Boyang Li** and Mark O. Riedl. Creative Gadget Design in Fictions: Generating Novel Object Types in Blended Spaces. *the 8th ACM Conference on Creativity and Cognition*. Atlanta, Georgia. 2011. Panel Presentation .

48. Nicholas Davis, **Boyang Li**, Brian O'Neill, Mark Riedl, and Michael Nitsche. Distributed Creative Cognition Digital Filmmaking. *the 8th ACM Conference on Creativity and Cognition*. Atlanta, Georgia. 2011. **Best Student Paper.**

49. James Niehaus, **Boyang Li** and Mark O. Riedl. Automated Scenario Adaptation in Support of Intelligent Tutoring Systems. *the 24th Conference of the Florida Artificial Intelligence Research Society*, 2011.

50. **Boyang Li** and Mark O. Riedl. An Offline Planning Approach to Game Plotline Adaptation. *the 6th Conference on Artificial Intelligence for Interactive Digital Entertainment*, 45-50. Palo Alto, CA. 2010.

51. **Boyang Li**, Han Yu, Zhiqi Shen, Chunyan Miao, Evolutionary Organizational Search, *the 8th International Conference on Autonomous Agents and Multiagent Systems*, 1329-1330, Budapest, Hungary. 2009.

52. **Boyang Li**, Yew-Soon Ong, Minh Nghia Le, Chi Keong Goh, Memetic Gradient Search, *IEEE Congress on Evolutionary Computation*, 2894-2901. Hong Kong. 2008.

53. Hock Beng Lim, Keck Voon Ling, Wenqiang Wang, Yuxia Yao, Mudasser Iqbal, **Boyang Li**, Xiaonan Yin, Tarun Sharma, The National Weather Sensor Grid. *SenSys*, 369-370, 2007.

Refereed Workshop Publications

1. Yinan Zhang, **Boyang Li**, You Yuan, and Chunyan Miao. Minimalist and High-performance Conversational Recommendation with Uncertainty Estimation for User Preference. *WSDM 2023 Workshop on Interactive Recommender Systems*. 2023.
2. Tong Zhang, Yong Liu, Peixiang Zhong, Chen Zhang, Hao Wang, Chunyan Miao, and **Boyang Li**. Toward Knowledge-Enriched Conversational Recommendation System.*The 4th Workshop on NLP for ConvAI*. 2022.
3. Xu Guo, Pengwei Xing, Siwei Feng, **Boyang Li**, and Chunyan Miao. Federated Learning with Diversified Preference for Humor Recognition. *The International Workshop on Federated Learning for User Privacy and Data Confidentiality in Conjunction with IJCAI (FL-IJCAI 2020)*. 2020.
4. Matthew Guzdial, Nathan Sturtevant and **Boyang Li**. Deep Static and Dynamic Level Analysis: A Study on Infinite Mario. *The 3rd Experimental AI in Games Workshop*, Burlingame, CA. 2016.
5. **Boyang Li**, Mohini Thakkar, Yijie Wang, and Mark O. Riedl. Data-Driven Alibi Story Telling for Social Believability. *the Social Believability in Games Workshop*, Fort Lauderdale, FL. 2014.
6. **Boyang Li**. Narrative Intelligence Without (Domain) Boundaries. *Doctoral Consortium, the 8th Annual Conference on Artificial Intelligence and Interactive Digital Entertainment*. Palo Alto, CA. 2012.
7. **Boyang Li**, Stephen Lee-Urban, and Mark O. Riedl. Toward Autonomous Crowd-Powered Creation of Interactive Narratives. *the 5th Workshop on Intelligent Narrative Technologies*, Palo Alto, CA, 2012.
8. **Boyang Li**, D. Scott Appling, Stephen Lee-Urban, and Mark O. Riedl. Learning Sociocultural Knowledge via Crowdsourced Examples. *the 4th AAAI Workshop on Human Computation*, Toronto, Canada, 2012.
9. **Boyang Li**, Stephen Lee-Urban, D. Scott Appling, and Mark O. Riedl. Automatically Learning to Tell Stories about Social Situations from the Crowd. *the LREC 2012 Workshop on Computational Models of Narrative*, 2012.
10. **Boyang Li** and Mark O. Riedl. A Phone That Cures Your Flu: Generating Imaginary Gadgets in Fictions with Planning and Analogies. *the 4th Workshop on Intelligent Narrative Technologies*, Palo Alto, CA, 2011.
11. Mark O. Riedl and **Boyang Li**. Creating Customized Virtual Experiences by Leveraging Human Creative Effort: A Desideratum. *the AAMAS'10 Workshop on Collaborative Human/AI Control for Interactive Experiences*, Toronto, Canada, 2010.
12. **Boyang Li** and Mark O. Riedl. Planning for Individualized Experiences with Quest-Centric Game Adaptation. *the ICAPS'10 Workshop on Planning in Games*, Toronto, Canada, 2010.

Preprints and Technical Reports

1. Yidan Sun, Qin Chao, **Boyang Li**. Synopses of Movie Narratives: a Video-Language Dataset for Story Understanding. arXiv:2203.05711.
2. Jun Chen, Ming Hu, **Boyang Li**, and Mohamed Elhoseiny. Efficient self-supervised vision pretraining with local masked reconstruction. arXiv.2206.00790.
3. Xin Zhou, Dejing Dou, and **Boyang Li**. Searching for Stage-wise Neural Graphs the Limit. arXiv:1912.12860.

4. Isaac Ahern, Adam Noack, Luis Guzman-Nateras, Dejing Dou, **Boyang Li**, Jun Huan. NormLime: A New Feature Importance Metric for Explaining Deep Neural Networks. arXiv:1909.04200.

Conference Demos

1. Yixiao Lan, Yuan Liu, **Boyang Li**, Chunyan Miao. Proof of Learning (PoLe): Empowering Machine Learning with Consensus Building on Blockchains (Demo). *The 35th AAAI Conference on Artificial Intelligence*. Virtual Conference. 2021.
2. **Boyang Li** and Mark O. Riedl. Scheherazade: Crowd-Powered Interactive Narrative Generation. *The 29th AAAI Conference on Artificial Intelligence*. Austin, TX. 2015.
3. Huiliang Zhang, Zhiqi Shen, Xuehong Tao, Chunyan Miao, **Boyang Li**, Ailiya, Yundong Cai. Emotional agent in serious game (DINO). *The 8th International Conference on Autonomous Agents and Multiagent Systems*. Budapest, Hungary. 2009.

Book Chapter

1. **Boyang Li** and Mark O. Riedl. Creating Customized Game Experiences by Leveraging Human Creative Effort: A Planning Approach. *Agents for Games and Simulations II*. Frank Dignum (Ed.) LNAI 6525. 99-116, 2011.

Patents Filed

1. Xuanyu Bao, Yuan Liu, Boyang Li, Weiming Li, and Cyril Leung. A Blockchain and Federated Learning Based Method for the Prediction of Agricultural Yield (一种基于区块链和联邦学习的农作物数据预测产量的方法). China Application CN2023101996428. Filed on March 4, 2023.
2. Boyang Li, Weiming Li, Cyril Leung et al. A Swiftly Adaptive Method and Equipment for Pig Detection and Tracking (一种具备快速适应力的猪只检测和追踪方法及装置). China Application CN202210960003.4. Filed on Aug 11, 2022.

Patents Issued

1. Joint understanding of actors, literary characters, and movies. US Patent No: 11,983,183. Date of Patent: May 14, 2024
2. Systems and methods for determining semantic roles of arguments in sentences. US Patent No.: 11,164,087. Date of Patent: Nov 2, 2021
3. Alignment of video and textual sequences for metadata analysis. US Patent No.: 10,956,685 and 10,558,761. Date of Patent: Mar 23, 2021 and Feb 11, 2020.
4. Dialog knowledge acquisition system and method. US Patent No.: 10,162,815. Date of Patent: Dec 25, 2018.

Awards

Young Faculty Research Award (Special Mention)
- College of Engineering, NTU. 2024

Best Application Award
- FL-IJCAI'20 Workshop 2020

Outstanding Program Committee Member, Nominated
- The 25th International Joint Conference on Artificial Intelligence (IJCAI) 2016

Best Program Committee Member, Honorable Mention
- The 10th Annual AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment (AIIDE) 2014

Travel Award
- The 27th AAAI Conference on Artificial Intelligence 2013

Best Student Paper
- The 8th ACM Conference on Creativity and Cognition 2011

Dean's List
- Nanyang Technological University 2004–2008

Teaching

SC 4000 - Machine Learning, NTU
6 weeks per semester, Spring semesters, 2021-2024
- Covered shallow learning techniques including multi-layer perceptrons, support vector machines, linear regression, ensembles, density estimation, clustering, and principal component analysis. Class sizes ranging from 150 to 300.

AI 6103 - Deep Learning and Applications, NTU
13 weeks per semester, Fall and Spring semesters, 2021-2024
- Developed a new course from scratch for the Masters of Science in Artificial Intelligence (by Coursework) program. In addition to topics of CE/CZ7454, this course covers structured predictions in computer vision and natural language processing as well as programming with PyTorch.

CE 7454 - Deep Learning for Data Science, NTU
First 7 weeks, Fall semesters, 2021-2024
- Developed a new graduate-level course from scratch. The course covering Linear Algebra, Probability Theory, Linear Regression, Logistic Regression, Multi-layer Perceptron, Convolutional Neural Network (CNN), CNN variants (ResNet, DenseNet, MobileNet, EfficientNet, Grouped Convolution, Temporal Convolution, etc.), Optimization Algorithms (SGD, Momentum, ADAM, Newton-Raphson), and Regularization Techniques.

CZ/CE 1104 - Linear Algebra for Computing, NTU
Spring 2021
- Lab sessions for 2 groups of 60+ students

CZ/CE 1107 - Data Structures and Algorithms, NTU
Spring 2021
- Biweekly tutorials for 5 groups of 150+ students
- Lab sessions for 2 groups of 60+ students

CS 3600 - Introduction to Artificial Intelligence, Georgia Tech
Summer 2013
- Covered all machine learning lectures.
- Teaching assistant for 27 students.
- Overall student rating 4.25 / 5.

CS 3600 - Introduction to Artificial Intelligence, Georgia Tech
Spring 2014
- Three guest lectures on genetic algorithms, MDPs, and computational creativity for more than 100+ students.

Current Lab Members

Family names are underscored.

Zhao Junqi (Research Engineer) 2020-2023

Zhang Tong (Ph.D. Student) 2021-2023

Li Haoxin (Ph.D. Student) 2021-2023

	Sun Yidan (Ph.D. Student)	2021-2023
	Chao Qin (Alibaba-sponsored Ph.D. Student)	2021-2023
	Du Zilin (Ph.D. Student)	2022-2023
	Ma Zhaoyi (Interdisciplinary Ph.D. Student)	2022-2023
	Guo Xu (Research Fellow)	2023-2024
	Devaansh Chandra Gupta (Research Assistant)	2023-2023
PhD Graduates	Anthony Meng Huat Tiong	2024
	Guo Xu	2023
	Zhang Yinan	2023
Master-by-Research Graduates	Luo Jiayun	2024
Master-by-Course Graduates	Wang Wei Sheng (MSAI)	2023
	Hou Yi (Master of Science in Artificial Intelligence)	2022
	Xia Yu (MSAI)	2021
Former Lab Members at NTU	Lu Xiaolei (Post Doc)	2021-2022
	Liu Chang (Ph.D. Student)	2020-2021
	Chen Yuanyuan (Ph.D. Student)	2020-2021
	Liew Zi Qin (Alibaba-sponsored Ph.D. Student)	2020-2021
	Huang Siyuan (Ph.D. Student)	2021
	Ann Chia Jing Xiu (Master Student by Research)	2021-2023
Supervisees at Baidu Research	Han Guo (Intern)	2019
	Pradyumna Vijay Tambwekar (Intern)	2018
	Isaac Ahern (Ph.D. at Oregon State Univ.)	2019-2021
	Adam Noack (Ph.D. at Oregon State Univ.)	2019-2020
Supervisees at Disney Research	Ming Sun (Post Doc)	2016-2017
	Ashutosh Modi (Post Doc)	2017
	Sai Prabhakar Pandi Selvaraj (Research Associate)	2017
	Huijuan Xu (Intern)	2017
	Hannah Kim (Intern)	2017
	Denys Katerenchuk (Intern)	2017
	Sasha Azad (Intern)	2016-2017
	Erva Ulu (Intern)	2016-2017

	Matthew Guzdial (Intern)	2016
	Tong Wang (Intern)	2016
	Rogelio Cardona-Rivera (Intern)	2016
	Yi Luan (Intern)	2015
Supervisees at Georgia Tech	Yijie "Jimmy" Wang (B.S. Computer Science)	2013–2014
	Mohini Thakkar (M.S. Computer Science)	2013–2014
	John P. Rafferty (B.S. Computer Science)	2013

Service

Associate Editor
- IEEE Transactions on Audio, Speech, and Language Processing 2023-2024

Senior Area Chair (Senior Meta-Reviewer)
- ACL Rolling Review 2023-2024
- EACL 2023

Area Chair (Senior Meta-Reviewer)
- The AAAI Conference on Artificial Intelligence (AAAI) 2023

Area Chair, Narrative Systems
- International Conference on Interactive Digital Storytelling (ICIDS) 2021

Co-Chair
- The 8th Intelligent Narrative Technologies Workshop (INT) 2015

Proceedings Co-Chair
- The 10th International Conference on the Foundations of Digital Games (FDG) 2015
- The 9th International Conference on the Foundations of Digital Games (FDG) 2014

Journal Reviewer
- IEEE Intelligent Systems 2020
- IEEE Transactions on Affective Computing 2019
- Journal of Discourse and Dialogue 2017, 2018
- The IEEE Transaction on Computational Intelligence and AI in Games (TCIAIG) 2012, 2015, 2016
- Virtual Reality (Springer Journal) 2015

Program Committee Member
- The Annual Meeting of the Association for Computational Linguistics (ACL) (2023)
- The International Conference on Computer Vision (ICCV) (2021-2023)
- The IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) (2021-2023)
- The IEEE Winter Conference on Applications of Computer Vision (WACV) (2021-2023)
- The AAAI Conference on Artificial Intelligence (AAAI) (2019-2022)
- The International Joint Conference on Artificial Intelligence (IJCAI) (2016-2020)
- The Annual Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (NAACL-HLT) (2018)
- The International Conference on Autonomous Agents and Multiagent Systems (AAMAS) (2016)
- The AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment (AIIDE) (2014-2021)

- The Foundation of Digital Games Conference (FDG) (2014-2018)
- The International Conference on Interactive Digital Storytelling (ICIDS) (2016-2019)
- The Experimental AI for Games Workshop (EXAG) (2014, 2018)

Conference Webmaster
- The 8th Annual AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment (AIIDE) 2012

Student Volunteer
- The 27th AAAI Conference on Artificial Intelligence
- The 2013 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (NAACL: HLT)

Library Graduate Advisor Board, Georgia Tech 2011 to 2014
- Acted as communication channel between students and the library
- Reviewed the library budget and and planned for its renovation
- Developed plans to employ AI and HCI techniques to meet the information needs of library users

External Assessor, Executive Diploma in Information Technology (UFH), Center for Continuing Education, University of Malaya 2023

Judge for the Singapore Science & Engineering Fair (for Junior College Students) 2023

Judge for the Undergraduate Research Symposium 2011, 2013
Georgia Tech

Invited Talks

Industry Demo Day, Singapore Data Science Consortium, Singapore Sep '24
Title: *Understanding and Selecting Data for Vision-Language Instruction Tuning*

Renmin University, China Jun '24
Title: *Vision-Language Models: Current Status and Next Steps*

Workshop on Effective Multimodal Perception and Interactive Learning, the Sixth Asia Conference on Cognitive Engineering and Intelligent Interaction. Hong Kong. Dec '23
Title: *Unlocking the Power of Large Pretrained Models Without Training*

Workshop on Large Generative Models Meet Multimodal Applications, ACM International Conference on Multimedia. Ottawa, Canada. Nov '23
Title: *Unlocking Multimedia Capabilities of Gigantic Pretrained Models*

Sungkyunkwan University, Suwon Campus, Korea Aug '23
Title: *Multimodal Machine Learning in the Era of Gigantic Pretrained Models*

Korea Advanced Institute of Science & Technology (KAIST), Seoul Campus, Korea Aug '23
Title: *Multimodal Machine Learning in the Era of Gigantic Pretrained Models*

Seoul National University, Korea Aug '23
Title: *Multimodal Machine Learning in the Era of Gigantic Pretrained Models*

University of British Columbia, Canada — Jun '23
Title: *Multimodal Machine Learning in the Era of Gigantic Pretrained Models: Challenges and (Some) Remedies*

University of Malaya, Kuala Lumpur, Malaysia — Mar '23
Title: *Multimodal Machine Learning in the Era of Gigantic Pretrained Models: What's Next*

Tsinghua University, China — Mar '23
Title: *Multimodal Machine Learning in the Era of Gigantic Pretrained Models*

Shandong University, China — Feb '23
Title: *Multimodal Machine Learning in the Era of Gigantic Pretrained Models*

Differential Manifold and AI Forum (Online) — Feb '23
Title: *Multimodal Machine Learning in the Era of Gigantic Pretrained Models*

GAMES-Webinar (Online) — Oct '22
Title: *Multimodal Machine Learning in the Era of Gigantic Pretrained Models*

Shandong University (Virtual) — Aug '22
Title: *Interpreting the Behaviors of Deep Neural Networks*

Microsoft Research Cambridge, UK — May '22
Title: *Interpreting and Understanding Optimization Trajectories of Deep Neural Networks.*

Webank-NTU Joint Research Center Machine Learning Virtual Workshop — Nov '21
Title: *Interpretability of Deep Neural Networks*

Young Scientist Forum, World Laureates Forum, Shanghai (Virtual) — Sep '21
Title: *Utilizing Insights from Optimization Trajectories of Deep Learning*

Shandong University (Virtual) — Aug '21
Title: *Improving Deep Learning by Understanding and Controlling the Optimization Trajectories*

Webank-NTU Joint Research Center Machine Learning Virtual Workshop — Nov '20
Title: *Beyond End-to-end Training?*

Northeastern University, China (Virtual) — Jun '20
Title: *Computational Narrative Intelligence.*

Webank-NTU Joint Research Center Workshop — Jan '20
Title: *Interpreting and Defending Neural Networks.*

Indian Institute of Technology Patna (Virtual) — Jan '20
Title: *Computational Narrative Intelligence.*

Alibaba Hangzhou — Jan '20
Title: *Computational Narrative Intelligence.*

School of Software, Shandong University — Jan '20
Title: *Computational Narrative Intelligence.*

Xiaomi Corporation — Jan '20
Title: *Computational Narrative Intelligence.*

Stanford University, mediaX Culture and AI Symposium — Oct '18
Title: *AI-Powered Interactive Media: The Verge of a New Era*

University of Utah — Oct '17
Title: *Computational Narrative Intelligence at Disney*

Disney Consumer Products and Interactive — Oct '16
Title: *Deciphering the Success of Google's AlphaGo*

University of Utah — Apr '15
Title: *Learning Knowledge to Support Domain-Independent Narrative Intelligence*

University of Iowa — Apr '15
Title: *Learning Knowledge to Support Domain-Independent Narrative Intelligence*

North Carolina State University — Mar '15
Title: *Learning Knowledge to Support Domain-Independent Narrative Intelligence*

Singapore University of Technology and Design — Jul '14
Title: *Computational Narrative Intelligence: Connecting Symbolic and Statistical Methods*

Nanyang Technological University — Jan '13
Title: *Computational Narrative Intelligence*

Press Coverage

联合早报: 生成式 AI 善解人意的不完美助理 Retrieved at https://www.zaobao.com.sg/lifestyle/feature/story20230213-1362525

36Kr: 我有好酒, 但社交平台有好故事吗? 现在让迪士尼用新的 AI 技术帮你挖掘! Retrieved at https://36kr.com/p/5089778.html

Web 担当者 *Forum*: この文章はウケる? ウケない? 文章を評価する AI を Disney Research が発表. November 9, 2017. Retrieved at https://webtan.impress.co.jp/e/2017/11/09/27361

ACM TechNews: A Good Read: AI Evaluates Quality of Short Stories. August 24, 2017. Retrieved at https://cacm.acm.org/news/220486-a-good-read-ai-evaluates-quality-of-short-stories/fulltext

Sina Tech News （新浪科技）: 迪士尼开始用人工智能预测短篇故事流行程度 August 22, 2017. Retrieved at http://tech.sina.com.cn/i/2017-08-22/doc-ifykcppy0220801.shtml

Engadget: Disney Research taught AI how to judge short stories. August 21, 2017. Retrieved at https://www.engadget.com/2017/08/21/disney-research-taught-ai-to-judge-short-stories/

Techcrunch: Disney experiments look to make kid-robot interactions more natural. June 26, 2017. Retrieved at https://techcrunch.com/2017/06/26/disney-experiments-look-to-make-kid-robot-interactions-more-natural/

Inside the Magic: Disney Research experimenting with interactive, storytelling robots to better connect with children. June 27, 2017. Retrieved at http://www.insidethemagic.net/2017/06/disney-research-experimenting-interactive-storytelling-robots-better-connect-children/

New Scientist: Automatic authors: Making machines that tell tales. Issue 2990. October 13, 2014.

The Guardian: Once upon a bot: can we teach computers to write fiction? November 11, 2014. Retrieved at http://www.theguardian.com/books/2014/nov/11/can-computers-write-fiction-artificial-intelligence

Gizmag.com: Creative AI: Teaching computers to be reporters and storytellers. February 9, 2015. Retrieved at http://www.gizmag.com/creative-ai-automated-writing-storytelling/35989/

Science Friday, National Public Radio: Rise of the Bot Author. March 13, 2015. Retrieved at http://sciencefriday.com/segment/03/13/2015/rise-of-the-bot-author.html

Inside the Black Box, WREK Atlanta 91.1FM: It's a Funny Story. July 1, 2015.

Motherboard: This AI Creates Interactive Fiction by Reading Other People's Stories. September 2, 2015. Retrieved at http://motherboard.vice.com/read/this-ai-creates-interactive-fiction-by-reading-other-peoples-stories

Popular Science: Algorithm Turns Fiction Into Interactive Games. September 3, 2015. Retrieved at http://www.popsci.com/algorithm-helps-you-write-an-interactive-fiction-story

LANGUAGES	Mandarin Chinese	Bilingual / Native
	English	Bilingual / Native