

# Li Ding

*"I have no special talent. I am passionately curious." (Einstein, 1952)*

CONTACT	<i>Email:</i> <code>liding@{umass.edu, mit.edu}</code>	<i>Website:</i> <code>www.mit.edu/~liding</code>
RESEARCH INTERESTS	Evolutionary Machine Learning, Computer Vision, Human-Centered Computing	
EDUCATION	<b>University of Massachusetts Amherst</b> , Amherst, MA	2020.9 - present
	<i>Ph.D. in Computer Science</i>	
	<b>Massachusetts Institute of Technology</b> , Cambridge, MA	2019.9 - 2020.1
	<i>Graduate Study in Computer Science (non-degree)</i>	
	<b>University of Rochester</b> , Rochester, NY	2016.6 - 2017.5
	<i>M.S. in Data Science</i>	
	<b>Central University of Finance and Economics</b> , Beijing, China	2012.9 - 2016.6
	<i>B.S. in Statistics</i>	
RESEARCH EXPERIENCE	<b>University of Massachusetts Amherst</b> , Amherst, MA	2020.9 - present
	<i>Research Assistant</i>	
	<ul style="list-style-type: none"><li>• Advisor: Prof. Lee Spector</li><li>• Work on evolutionary machine learning and genetic programming</li></ul>	
	<b>Massachusetts Institute of Technology</b> , Cambridge, MA	2020.7 - present
	<i>Research Affiliate</i>	
	<ul style="list-style-type: none"><li>• Advisor: Dr. Bryan Reimer</li><li>• Work on autonomous vehicles and driver monitoring systems</li></ul>	
	<b>Massachusetts Institute of Technology</b> , Cambridge, MA	2017.9 - 2020.6
	<i>Research Engineer</i>	
	<ul style="list-style-type: none"><li>• Advisor: Dr. Lex Fridman and Dr. Bryan Reimer</li><li>• Work on autonomous vehicles and human-centered AI, develop deep learning and computer vision algorithms for real-time driving scene perception and driver monitoring systems</li></ul>	
	<b>University of Rochester</b> , Rochester, NY	2017.5 - 2017.8
PUBLICATIONS	<i>Research Associate</i>	
	<ul style="list-style-type: none"><li>• Advisor: Prof. Chenliang Xu</li><li>• Worked on weakly-supervised action recognition in untrimmed videos</li></ul>	
	PEER-REVIEWED	
	[1] <b>L. Ding</b> , M. Glazer, M. Wang, B. Mehler, B. Reimer, and L. Fridman, "MIT-AVT Clustered Driving Scene Dataset: Evaluating Perception Systems in Real-World Naturalistic Driving Scenarios," in <i>IEEE Intelligent Vehicles Symposium: Workshop on Naturalistic Driving Data Analytics</i> , 2020. (selected for oral presentation)	
	[2] L. Fridman, <b>L. Ding</b> , B. Jenik, and B. Reimer, "Arguing Machines: Human Supervision of Black Box AI Systems That Make Life-Critical Decisions," in <i>Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR): Workshop on Autonomous Driving</i> , 2019.	
	[3] L. Fridman, D. E. Brown, M. Glazer, W. Angell, S. Dodd, B. Jenik, J. Terwilliger, A. Patsekin, J. Kindelsberger, <b>L. Ding</b> , and S. Seaman, <i>et al.</i> , "MIT Advanced Vehicle Technology Study:	

Large-Scale Naturalistic Driving Study of Driver Behavior and Interaction with Automation,” *IEEE Access*, vol. 7, pp. 102021–102038, 2019.

- [4] **L. Ding** and C. Xu, “Weakly-Supervised Action Segmentation with Iterative Soft Boundary Assignment,” in *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2018.
- [5] L. Fridman, H. Schmidt, J. Terwilliger, and **L. Ding**, “Human Interaction with Deep Reinforcement Learning Agents in Virtual Reality,” in *Advances in Neural Information Processing Systems (NeurIPS): Deep Reinforcement Learning Workshop*, 2018.

#### PREPRINTS

- [1] **L. Ding** and L. Fridman, “Object as Distribution,” *arXiv preprint arXiv:1907.12929*, 2020.
- [2] **L. Ding**, J. Terwilliger, R. Sherony, B. Reimer, and L. Fridman, “Value of Temporal Dynamics Information in Driving Scene Segmentation,” *arXiv preprint arXiv:1904.00758*, 2019.

#### TECHNICAL REPORTS

- [1] **L. Ding**, M. Glazer, J. Terwilliger, B. Reimer, and L. Fridman, “MIT DriveSeg (Semi-auto) Dataset: Large-scale Semi-automated Annotation of Semantic Driving Scenes,” 2020.
- [2] **L. Ding**, J. Terwilliger, R. Sherony, B. Reimer, and L. Fridman, “MIT DriveSeg (Manual) Dataset for Dynamic Driving Scene Segmentation,” 2020.
- [3] **L. Ding** and C. Xu, “Tricornet: A Hybrid Temporal Convolutional and Recurrent Network for Video Action Segmentation,” *arXiv preprint arXiv:1705.07818*, 2017.

PRESENTATIONS	Evaluating Perception Systems in Real-World Naturalistic Driving Scenarios	2020.10
	<i>Oral presentation at IEEE IV 2020: Workshop on Naturalistic Driving Data Analytics</i>	
	MIT DriveSeg Dataset for Dynamic Driving Scene Segmentation	2020.9
	<i>Invited talk at AutoSens 2020</i>	
	Data-Driven Computer Vision Research for Human-Centered Autonomous Vehicles	2019.10
	<i>Invited talk at MIT CSAIL (Data Systems Group)</i>	
	Weakly-Supervised Action Segmentation with Iterative Soft Boundary Assignment	2018.6
	<i>Poster presentation at CVPR 2018</i>	
	Human Action Recognition with Deep Convolutional Neural Networks	2017.5
	<i>Poster presentation at Center for Integrated Research Computing, University of Rochester</i>	

#### HONORS AND AWARDS

##### SCHOLARSHIPS

- Half-Tuition Scholarship, *University of Rochester* 2016
- Excellent Youth of the Year (top 2%), *Central Univ. of Finance and Economics* 2015

##### COMPETITIONS

- 4th Place (among 150 teams, top 3%), *MIT 6.869 Miniplaces Challenge* 2019
- Bronze Medal (107th of 1972, top 6%), *Kaggle Data Science Bowl* 2017
- Meritorious Winner (top 5%), *COMAP’s Mathematical Contest In Modeling* 2015

#### SERVICE

##### REVIEWER

- British Machine Vision Conference (BMVC) 2020
- ACM Conference on Automotive User Interfaces (AutoUI) 2020
- IEEE Transactions on Circuits and Systems for Video Technology 2018 - 2020
- IEEE Access 2018

#### TEACHING ASSISTANT

- MIT 6.S094: Deep Learning for Self-Driving Cars Winter 2018 & 2019
- MIT 6.S093: Human-Centered Artificial Intelligence Winter 2019
- MIT 6.S099: Artificial General Intelligence Winter 2018

#### MISC.

##### SIDE PROJECTS

- Created tutorials and competitions for *MIT Deep Learning* courses (7k stars on Github)
- Prepared interview materials for *AI Podcast* with Dr. Lex Fridman (12M views on Youtube)
- Taught a summer/winter workshop at MIT with Dr. Tom Bertalan to high school students on building and programming autonomous robocars

##### PROGRAMMING AND SOFTWARE

Python, C++, JavaScript, PyTorch, TensorFlow, Keras, TensorFlow.js.

## References

- [1] L. Fridman, **L. Ding**, B. Jenik, and B. Reimer, “Arguing Machines: Human Supervision of Black Box AI Systems That Make Life-Critical Decisions,” in *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR): Workshop on Autonomous Driving*, 2019.
- [2] L. Fridman, D. E. Brown, M. Glazer, W. Angell, S. Dodd, B. Jenik, J. Terwilliger, A. Patsekin, J. Kindelsberger, **L. Ding**, and S. Seaman, *et al.*, “MIT Advanced Vehicle Technology Study: Large-Scale Naturalistic Driving Study of Driver Behavior and Interaction with Automation,” *IEEE Access*, vol. 7, pp. 102021–102038, 2019.
- [3] **L. Ding** and C. Xu, “Weakly-Supervised Action Segmentation with Iterative Soft Boundary Assignment,” in *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2018.
- [4] L. Fridman, H. Schmidt, J. Terwilliger, and **L. Ding**, “Human Interaction with Deep Reinforcement Learning Agents in Virtual Reality,” in *Advances in Neural Information Processing Systems (NeurIPS): Deep Reinforcement Learning Workshop*, 2018.
- [5] **L. Ding** and C. Xu, “Tricornet: A Hybrid Temporal Convolutional and Recurrent Network for Video Action Segmentation,” *arXiv preprint arXiv:1705.07818*, 2017.