Li Ding

CONTACT

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OVERVIEW

- Research interests: computer vision, machine learning, and human-centered AI
- 3 years of full-time research experience in autonomous vehicles domain, leading the research and development effort of projects including external scene perception and driver monitoring systems
- Publications (first-author) in top-tier CV and AI conferences/workshops, e.g. CVPR, NeurIPS
- Work experience with major machine/deep learning frameworks and large-scale datasets

EDUCATION

Massachusetts Institute of Technology, Cambridge, MA 2019.9 - 2020.1
Graduate Study in Electrical Engineering and Computer Science (non-degree)

University of Rochester, Rochester, NY 2016.6 - 2017.5
M.S. in Data Science

Central University of Finance and Economics, Beijing, China 2012.9 - 2016.6
B.S. in Statistics

EXPERIENCE

Massachusetts Institute of Technology, Cambridge, MA 2017.9 - present
Research Engineer

- Advisor: Dr. Lex Fridman and Dr. Bryan Reimer
- 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

University of Rochester, Rochester, NY 2017.5 - 2017.9
Research Associate

- Advisor: Prof. Chenliang Xu
- Worked on weakly-supervised action recognition in untrimmed videos

PUBLICATIONS

PEER-REVIEWED

[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.

UNDER REVIEW

[1] **L. Ding**, J. Terwilliger, A. Parab, M. Wang, B. Mehler, B. Reimer, and L. Fridman, "Pupils and Blinks in the Wild," under review at *European Conference on Computer Vision (ECCV)*, 2020.

[2] **L. Ding**, M. Wang, R. Sherony, B. Mehler, and B. Reimer, "Semantic Understanding on Semantic Scenes," under review at *British Machine Vision Conference (BMVC)*, 2020.

[3] **L. Ding**, 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," under review at *IEEE Intelligent Vehicles Symposium: Workshop on Naturalistic Driving Data Analytics*, 2020.

[4] **L. Ding**, J. Terwilliger, R. Sherony, B. Reimer, and L. Fridman, "Value of Temporal Dynamics Information in Driving Scene Segmentation," under review at *IEEE Transactions on Intelligent Vehicles*, *arXiv preprint arXiv:1904.00758*, 2019.

Technical Reports

[1] **L. Ding** and L. Fridman, "Object as Distribution," *arXiv preprint arXiv:1907.12929*, 2019.

[2] **L. Ding**, J. Terwilliger, R. Sherony, B. Reimer, and L. Fridman, "MIT DriveSeg Dataset for Dynamic Driving Scene Segmentation," 2019.

[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

Data-Driven Computer Vision Research for Human-Centered Autonomous Vehicles — 2019.10
Invited talk at MIT CSAIL (Data Systems Group)

Weakly-Supervised Action Segmentation with Iterative Soft Boundary Assignment — 2018.6
Poster presentation at CVPR 2018

Human Action Recognition with Deep Convolutional Neural Networks — 2017.5
Poster presentation at Center for Integrated Research Computing, University of Rochester

Honors and Awards

Scholarships

- Half-Tuition Scholarship for Graduate Study, *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 Mathematical Contest In Modeling* — 2015

Service

Reviewer

- 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 & Deep Learning

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

Software and Tools

Linux/Unix, Bash, Git, LaTeX, Docker, OpenCV, FFmpeg, ROS, MySQL.