

## Mengye Ren – Curriculum Vitæ

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CONTACT INFORMATION	60 5th Ave, Rm 508 New York, NY 10011-8868, USA	<i>Tel:</i> +1 (212) 998-3369 <i>Email:</i> mengye@cs.nyu.edu <i>Website:</i> <a href="https://mengyeren.com">https://mengyeren.com</a>
RESEARCH INTERESTS	Areas: Machine learning, computer vision, meta learning, representation learning, few-shot learning, brain & cognitively inspired learning, robot learning, self-driving vehicles. My key research question is: how do we enable human-like, agent-based machine intelligence to continually learn, adapt, and reason in naturalistic environments? Towards this goal of building a more general and flexible AI, my research centers on developing <i>representation learning</i> and <i>meta-learning</i> algorithms.	
EDUCATION	<b>University of Toronto</b> <i>Department of Computer Science</i> Ph.D., Supervisors: Richard Zemel and Raquel Urtasun Thesis: “Open World Machine Learning with Limited Labeled Data” Committee: Roger Grosse, Geoffrey Hinton, Yee Whye Teh  <i>Department of Computer Science</i> M.Sc., Supervisor: Richard Zemel  <i>Department of Engineering Science, ECE Option</i> BASc, CGPA 3.90/4.00, with high honours	2017/01 – 2021/10  2015/09 – 2017/01  2011/09 – 2015/06
PROFESSIONAL EXPERIENCE	<b>New York University</b> , New York, NY, USA <i>Assistant Professor of Computer Science and Data Science</i> <b>Google Brain</b> , Toronto, ON, Canada <i>Visiting Faculty Researcher</i> <b>Waabi Innovation</b> , Toronto, ON, Canada <i>Senior Researcher II</i> <b>Uber ATG</b> , Toronto, ON, Canada <i>Senior Research Scientist I</i> <i>Research Scientist II</i> <b>Twitter</b> , Cambridge, MA, USA <i>Research Intern</i> <b>Google</b> , Mountain View, CA, USA <i>Research Intern in Google Brain and Image Understanding</i> <i>SWE Intern in StreetView</i> <b>Microsoft</b> , Redmond, WA, USA <i>SDET Intern in Visual Studio</i> <i>SDET Intern in Visual Studio</i>	2022/09 – Present 2022/01 – 2022/09 2021/03 – 2021/12 2018/09 – 2021/02 2017/05 – 2018/09 2016/06 – 2016/08 2015/06 – 2015/08 2014/06 – 2014/08 2013/06 – 2013/08 2012/06 – 2012/08
TEACHING	<b>New York University</b> <ul style="list-style-type: none"><li>DS-GA 1003: Machine Learning</li></ul> <b>Vector Institute</b> <ul style="list-style-type: none"><li>Deep Learning II</li></ul>	2023 Spring  2020 Fall

## University of Toronto

- CSC 411: Machine Learning and Data Mining

2019 Winter

PEER-REVIEWED  
CONFERENCE  
PUBLICATIONS

(\*=equal contribution)

### 2023

- C1 **Mengye Ren**, Simon Kornblith, Renjie Liao, Geoffrey Hinton. Scaling forward gradient with local losses. In *11th International Conference on Learning Representations (ICLR)*, 2023.
- C2 Matt Jones, Tyler R. Scott, **Mengye Ren**, Gamaleldin F. Elsayed, Katherine Hermann, David Mayo, Michael C. Mozer. Learning in temporally structured environments. In *11th International Conference on Learning Representations (ICLR)*, 2023.
- C3 Lunjun Zhang, Anqi Joyce Yang, Yuwen Xiong, Sergio Casas, Bin Yang, **Mengye Ren**, Raquel Urtasun. Towards unsupervised object detection from LiDAR point clouds. In *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2023.

### 2022

- C4 Chris Zhang\*, Runsheng Guo\*, Wenyuan Zeng\*, Yuwen Xiong, Binbin Dai, Rui Hu, **Mengye Ren**, Raquel Urtasun. Rethinking closed-loop training for autonomous driving. In *18th European Conference on Computer Vision (ECCV)*, Tel-Aviv, Israel, 2022.

### 2021

- C5 Yuwen Xiong, **Mengye Ren**, Wenyuan Zeng, Raquel Urtasun. Self-supervised representation learning from flow equivariance. In *International Conference on Computer Vision (ICCV)*, 2021.
- C6 James Tu\*, Tsun-Hsuan Wang\*, Jingkang Wang, Sivabalan Manivasagam, **Mengye Ren**, Raquel Urtasun. Adversarial attacks on multi-agent communication. In *International Conference on Computer Vision (ICCV)*, 2021.
- C7 Sean Segal\*, Nishanth Kumar\*, Sergio Casas, Wenyuan Zeng, **Mengye Ren**, Jingkang Wang, Raquel Urtasun. Just label what you need: Fine-grained active selection for perception and prediction through partially labeled scenes. In *Conference on Robot Learning (CoRL)*, London, United Kingdom, 2021.
- C8 James Tu, Huichen Li, Xinchun Yan, **Mengye Ren**, Yun Chen, Ming Liang, Eilyan Bitar, Ersin Yumer, Raquel Urtasun. Exploring adversarial robustness of multi-sensor perception systems in self driving. In *Conference on Robot Learning (CoRL)*, London, United Kingdom, 2021.
- C9 Alexander Wang\*, **Mengye Ren**\*, Richard S. Zemel. SketchEmbedNet: Learning novel concepts by imitating drawings. In *38th International Conference on Machine Learning (ICML)*, 2021.
- C10 **Mengye Ren**, Michael L. Iuzzolino, Michael C. Mozer, Richard S. Zemel. Wandering within a world: Online contextualized few-shot learning. In *9th International Conference on Learning Representations (ICLR)*, 2021.
- C11 James Lucas, **Mengye Ren**, Irene Kameni, Toniann Pitassi, Richard S. Zemel. Theoretical bounds on estimation error for meta learning. In *9th International Conference on Learning Representations (ICLR)*, 2021.
- C12 Bob Wei\*, **Mengye Ren**\*, Wenyuan Zeng, Ming Liang, Bin Yang, Raquel Urtasun. Perceive, attend and drive: Learning spatial attention for safe self-driving. In *IEEE International Conference on Robotics and Automation (ICRA)*, Xi'an, China, 2021. (oral)
- C13 Shuhan Tan\*, Kelvin Wong\*, Shenlong Wang, Sivabalan Manivasagam, **Mengye Ren**, Raquel Urtasun. SceneGen: Learning to simulate realistic traffic scenes. *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2021.
- C14 Jingkang Wang, Ava Pun, James Tu, Abbas Sadat, Sergio Casas, Sivabalan Manivasagam, **Mengye Ren**, Raquel Urtasun. AdvSim: Generating safety-critical scenarios for self-driving vehicles. *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2021.

## 2020

- C15 Yuwen Xiong, **Mengye Ren**, Raquel Urtasun. LoCo: Local contrastive representation learning. In *Advances in Neural Information Processing Systems 33 (NeurIPS)*, Vancouver, British Columbia, Canada, 2020.
- C16 Nicholas Vaidvelu, **Mengye Ren**, James Tu, Jingkang Wang, Raquel Urtasun. Learning to communicate and correct pose errors. In *Conference on Robot Learning (CoRL)*, Cambridge, Massachusetts, USA, 2020.
- C17 Lingyun (Luke) Li, Bin Yang, Ming Liang, Wenyuan Zeng, **Mengye Ren**, Sean Segal, Raquel Urtasun. End-to-end contextual perception and prediction with interaction transformer. In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Las Vegas, Nevada, USA, 2020. (oral)
- C18 Abbas Sadat\*, Sergio Casas Romero\*, **Mengye Ren**, Xinyu Wu, Pranaab Dhawan, Raquel Urtasun. Perceive, predict, and plan: Safe motion planning through interpretable semantic representations. In *16th European Conference on Computer Vision (ECCV)*, Glasgow, United Kingdom, 2020.
- C19 Quinlan Sykora\*, **Mengye Ren\***, Raquel Urtasun. Multi-agent routing value iteration network. In *37th International Conference on Machine Learning (ICML)*, Vienna, Austria, 2020.
- C20 James Tu, **Mengye Ren**, Sivabalan Manivasagam, Ming Liang, Bin Yang, Richard Du, Frank Cheng, Raquel Urtasun. Physically realizable adversarial examples for LiDAR object detection. In *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, Seattle, Washington, USA, 2020.

## 2019

- C21 **Mengye Ren**, Renjie Liao, Ethan Fetaya, Richard S. Zemel. Incremental few-shot learning with attention attractor networks. In *Advances in Neural Information Processing Systems 32 (NeurIPS)*, Vancouver, British Columbia, Canada, 2019.
- C22 Kelvin Wong, Shenlong Wang, **Mengye Ren**, Ming Liang, Raquel Urtasun. Identifying unknown instances for autonomous driving. In *Conference on Robot Learning (CoRL)*, Osaka, Japan, 2019. (spotlight)
- C23 Abbas Sadat\*, **Mengye Ren\***, Andrei Pokrovsky, Yen-Chen Lin, Ersin Yumer, Raquel Urtasun. Jointly learnable behavior and trajectory planner for self-driving vehicles. In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Macau, China, 2019. (oral)
- C24 Chris Zhang, **Mengye Ren**, Raquel Urtasun. Graph hypernetworks for neural architecture search. In *7th International Conference on Learning Representations (ICLR)*, New Orleans, Louisiana, USA, 2019.

## 2018

- C25 **Mengye Ren**, Wenyuan Zeng, Bin Yang, Raquel Urtasun. Learning to reweight examples for robust deep learning. In *35th International Conference on Machine Learning (ICML)*, Stockholm, Sweden, 2018.
- C26 **Mengye Ren\***, Andrei Pokrovsky\*, Bin Yang\*, Raquel Urtasun. SBNet: Sparse blocks network for fast inference. In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, Salt Lake City, Utah, USA, 2018. (spotlight)
- C27 **Mengye Ren**, Eleni Triantafillou\*, Sachin Ravi\*, Jake Snell, Kevin Swersky, Joshua B. Tenenbaum, Hugo Larochelle, Richard S. Zemel. Meta-learning for semi-supervised few-shot classification. In *6th International Conference on Learning Representations (ICLR)*, Vancouver, British Columbia, Canada, 2018.
- C28 Yuhuai Wu\*, **Mengye Ren\***, Renjie Liao, Roger B. Grosse. Understanding short-horizon bias in meta optimization. In *6th International Conference on Learning Representations (ICLR)*, Vancouver, British Columbia, Canada, 2018.

## 2017

- C29 Aidan N. Gomez\*, **Mengye Ren\***, Raquel Urtasun, Roger B. Grosse. The reversible residual network: Backpropagation without storing activations. In *Advances in Neural Information Processing Systems 30 (NIPS)*, Long Beach, California, USA, 2017.
- C30 **Mengye Ren**, Richard S. Zemel. End-to-end instance segmentation with recurrent attention. In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, Honolulu, Hawaii, USA, 2017. (spotlight)
- C31 **Mengye Ren\***, Renjie Liao\*, Raquel Urtasun, Fabian H. Sinz, Richard S. Zemel. Normalizing the normalizers: Comparing and extending network normalization schemes. In *5th International Conference on Learning Representations (ICLR)*, Toulon, France, 2017.

## 2015

- C32 **Mengye Ren**, Ryan Kiros, Richard S. Zemel. Exploring models and data for image question answering. In *Advances in Neural Information Processing Systems 28 (NIPS)*, Montréal, Québec, Canada, 2015.

## PEER-REVIEWED 2022

### WORKSHOP PAPERS

- W1 Andrew J. Nam\*, **Mengye Ren\***, Chelsea Finn, James L. McClelland. Learning to reason with relational abstractions. In *2nd Workshop on MATH-AI at NeurIPS*, 2022.
- W2 Matt Jones, Tyler R. Scott, Gamaleldin F. Elsayed, **Mengye Ren**, Katherine Hermann, David Mayo, Michael C. Mozer. Neural network online training with sensitivity to multiscale temporal structure. In *Memory in Artificial and Real Intelligence Workshop at NeurIPS*, 2022.

## 2020

- W3 **Mengye Ren\***, Eleni Triantafillou\*, Kuan-Chieh Wang\*, James Lucas\*, Jake Snell, Xaq Pitkow, Andreas S. Tolias, Richard S. Zemel. Flexible few-shot learning of contextual similarity. In *NeurIPS Meta-Learning Workshop*, Vancouver, BC, Canada, 2020.
- W4 Laleh Seyyed-Kalantari, Karsten Roth, **Mengye Ren**, Parsa Torabian, Joseph P. Cohen, Marzyeh Ghassemi. Multi-label incremental few-shot learning for medical image pathology classifiers. In *Medical Imaging Meets NeurIPS Workshop*, Vancouver, BC, Canada, 2020.
- W5 **Mengye Ren**, Michael L. Iuzzolino, Michael C. Mozer, Richard S. Zemel. Wandering within a world: Online contextualized few-shot learning. In *ICML Continual Learning Workshop & Lifelong Learning Workshop & Workshop on Learning in Artificial Open Worlds*, Vienna, Austria, 2020. (oral)
- W6 Jingkang Wang\*, **Mengye Ren\***, Ilija Bogunovic, Yuwen Xiong, Raquel Urtasun. Cost-efficient online hyperparameter optimization. In *ICML RealML Workshop*, Vienna, Austria, 2020.

## 2019

- W7 James Lucas, **Mengye Ren**, Richard S. Zemel. Information-theoretic limitations on novel task generalization. In *NeurIPS Workshop on Machine Learning with Guarantees*, Vancouver British Columbia, Canada, 2019. (oral)
- W8 Yuwen Xiong\*, **Mengye Ren\***, Renjie Liao, Kelvin Wong, Raquel Urtasun. Deformable filter convolution for point cloud reasoning. *arXiv preprint arXiv:1907.13079*. In *NeurIPS Workshop on Sets & Partitions*, Vancouver, British Columbia, Canada, 2019.

## 2018

- W9 **Mengye Ren**, Renjie Liao, Ethan Fetaya, Richard S. Zemel. Incremental few-shot learning with attention attractor networks. In *NeurIPS Meta-Learning Workshop*, Montréal, Québec, Canada, 2018.
- W10 Chris Zhang, **Mengye Ren**, Raquel Urtasun. Graph hypernetworks for neural architecture search. In *NeurIPS Meta-Learning Workshop*, Montréal, Québec, Canada, 2018.

## 2017

- W11 **Mengye Ren**, Eleni Triantafillou\*, Sachin Ravi\*, Jake Snell, Kevin Swersky, Joshua B. Tenenbaum, Hugo Larochelle, Richard S. Zemel. Meta-learning for semi-supervised few-shot classification. In *NIPS Meta-Learning Workshop & Learning with Limited Data Workshop*, Long Beach, California, USA, 2017.
- W12 Yuhuai Wu\*, **Mengye Ren\***, Renjie Liao, Roger B. Grosse. Understanding short-horizon bias in meta optimization. In *NIPS Meta-Learning Workshop*, Long Beach, California, USA, 2017.

## 2015

- W13 **Mengye Ren**, Ryan Kiros, Richard Zemel. Exploring models and data for image question answering. In *ICML Deep Learning Workshop*, Lille, France, 2015. (oral)

## PREPRINTS & TECH REPORTS

- R1 Andrew J. Nam\*, **Mengye Ren\***, Chelsea Finn, James L. McClelland. Learning to reason with relational abstractions. *arXiv preprint arXiv:2210.02615*, 2022.
- R2 Renjie Liao, Simon Kornblith, **Mengye Ren**, David J. Fleet, Geoffrey Hinton. Gaussian-Bernoulli RBMs without tears. *arXiv preprint arXiv:2210.10318*, 2022.
- R3 **Mengye Ren**, Tyler R. Scott, Michael L. Iuzzolino, Michael C. Mozer, Richard Zemel. Online unsupervised learning of visual representations and categories. *arXiv preprint arXiv:2109.05675*, 2021.
- R4 **Mengye Ren\***, Eleni Triantafillou\*, Kuan-Chieh Wang\*, James Lucas\*, Jake Snell, Xaq Pitkow, Andreas S. Tolias, Richard S. Zemel. Flexible few-shot learning of contextual similarity. *arXiv preprint arXiv:2012.05895*, 2020.
- R5 Yuwen Xiong\*, **Mengye Ren\***, Raquel Urtasun. Learning to remember from a multi-task teacher. *arXiv preprint arXiv:1910.04650*, 2019.

## PATENTS

- P1 Raquel Urtasun, Kelvin Ka Wing Wong, Shenlong Wang, **Mengye Ren**, Ming Liang. Systems and methods for identifying unknown instances, US 11,475,675 B2, *US Patent*, 2022.
- P2 Raquel Urtasun, **Mengye Ren**, Andrei Pokrovsky, Bin Yang. Sparse convolutional neural networks, US 11,061,402 B2, *US Patent*, 2021.

## AWARDS & HONORS

- NSERC Postdoctoral Fellowship, \$90,000 CAD (declined) 2021 – 2023
- Facebook Fellowship Finalist (91 out of 1876 PhD applicants worldwide) 2020
- NSERC Alexander Graham Bell Scholarship, \$105,000 CAD 2018 – 2021
- NVIDIA Research Pioneer Award 2018
- NVIDIA Research Pioneer Award 2017
- NIPS 2017 Travel Award \$800 USD 2017
- ICLR 2017 Travel Award \$1,250 USD 2017
- MLSS 2015 Kyoto Travel Support ¥140,000 JPY 2015
- U of T Quantathon 2nd Place \$5,000 CAD 2015
- U of T Undergraduate Mathematics Competition, Honourable Mention 2015
- Wallberg Undergraduate Scholarship \$1,500 CAD 2014
- International 5th place in Windward AI Challenge, 1st in U of T 2014
- Dean's List for all semesters in undergraduate studies 2011 – 2015
- Entrance Scholarship from the University of Toronto \$5,000 CAD 2011
- Meritorious Award in Mathematical Contest of Modeling (MCM) 2011

PROFESSIONAL  
SERVICE

*Area Chair:*

- International Conference on Automated Machine Learning (AutoML) 2022 - 2023
- NeurIPS Workshop on Meta-Learning (MetaLearn) 2020 - 2022

*Journal Reviewer:*

- Journal of Machine Learning Research (JMLR)
- International Journal of Computer Vision (IJCV)
- IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)
- IEEE Transactions on Image Processing (TIP)
- IEEE Transactions on Neural Networks and Learning Systems (TNNLS)
- IEEE Transactions on Computational Imaging (TCI)
- Neural Networks
- Machine Learning
- Optimization Methods and Software

*Conference Reviewer:*

- Conference on Neural Information Processing Systems (NeurIPS) 2016 – 2022
- International Conference on Machine Learning (ICML) 2017 – 2023
- International Conference on Learning Representations (ICLR) 2018 – 2023
- Conference on Computer Vision and Pattern Recognition (CVPR) 2018 – 2023
- International Conference on Computer Vision (ICCV) 2019 – 2023
- European Conference on Computer Vision (ECCV) 2020
- International Conference on Robotics and Automation (ICRA) 2021
- Conference on Lifelong Learning Agents (CoLLAs) 2022 - 2023
- International Conference on Intelligent Robots and Systems (IROS) 2020
- Association for the Advancement of Artificial Intelligence Conference (AAAI) 2018
- Uncertainty in Artificial Intelligence (UAI) 2018

*Workshop (Co-)Organizer*

- ICML 2023 Localized Learning Workshop 2023
- ICLR 2023 Workshop on Scene Representations for Autonomous Driving 2023

*Seminar (Co-)Organizer:*

- Self-Supervised Learning Weekly Seminars 2021 – 2022
- Meta-Learning Weekly Seminars 2019 – 2021
- Uber ATG R&D Weekly Paper Reading Seminars 2018 – 2019

OPEN SOURCE  
SOFTWARES

- Forward-mode automatic differentiation for TensorFlow.  
GitHub: <https://github.com/renmengye/tensorflow-forward-ad>
- DeepDashboard: Real-time web-based training visualizer.  
GitHub: <https://github.com/renmengye/deep-dashboard>

INVITED TALKS

**2022**

- T1 Meta-learning within a lifetime. NeurIPS 2022 MetaLearn Workshop, Invited Talk. New Orleans, Louisiana, USA. Dec 2022.
- T2 Biologically plausible learning using local activity perturbation. NYU CDS Lunch Seminar. New York, New York, USA. Oct 2022.
- T3 Visual learning in the open world. 19th Conference on Vision and Robotics (CRV), Invited Symposium. Toronto, Ontario, Canada. Jun 2022.

**2021**

- T4 Visual learning in the open world. University of Oxford. Oxford, UK. Nov 2021.
- T5 Visual learning in the open world. Google Brain. Toronto, Ontario, Canada. Nov 2021.
- T6 Visual learning in the open world. Stanford University. Stanford, California, USA. Oct 2021.
- T7 Steps towards making machine learning more natural. École Polytechnique Fédérale de Lausanne. Lausanne, Switzerland. Apr 2021.
- T8 Steps towards making machine learning more natural. University of Michigan. Ann Arbor, Michigan, USA. Mar 2021.
- T9 Steps towards making machine learning more natural. Université de Montréal. Montréal, Québec, Canada. Mar 2021.
- T10 Steps towards making machine learning more natural. University of North Carolina, Chapel Hill. Chapel Hill, North Carolina, USA. Mar 2021.
- T11 Steps towards making machine learning more natural. University of Chicago. Chicago, Illinois, USA. Mar 2021.
- T12 Steps towards making machine learning more natural. University of British Columbia. Vancouver, British Columbia, Canada. Mar 2021.
- T13 Steps towards making machine learning more natural. University of Waterloo. Waterloo, Ontario, Canada. Mar 2021.
- T14 Steps towards making machine learning more natural. New York University. New York, New York, USA. Mar 2021.
- T15 Steps towards making machine learning more natural. University of Edinburgh. Edinburgh, UK. Mar 2021.
- T16 Steps towards making machine learning more natural. University of Maryland, College Park. College Park, Maryland, USA. Feb 2021.
- T17 A tutorial on few-shot learning and unsupervised representation learning. Vector Institute. Toronto, Ontario, Canada. Jan 2021.

**2020**

- T18 How can we apply few-shot learning? Vector Institute. Toronto, Ontario, Canada. Oct 2020.
- T19 Towards continual and compositional few-shot learning. Stanford University. Stanford, California, USA. Oct 2020.
- T20 Towards continual and compositional few-shot learning. Brown University. Providence, Rhode Island, USA. Sept 2020.
- T21 Towards continual and compositional few-shot learning. MIT. Cambridge, Massachusetts, USA. Sept 2020.
- T22 Towards continual and compositional few-shot learning. Mila. Montréal, Québec, Canada. Aug 2020.
- T23 Towards continual and compositional few-shot learning. Uber ATG. Toronto, Ontario, Canada. Aug 2020.
- T24 Wandering within a world: Online contextualized few-shot learning. Google Brain. Montréal, Québec, Canada. Aug 2020.
- T25 Wandering within a world: Online contextualized few-shot learning. ICML 2020 Lifelong Learning Workshop. July 2020.
- T26 Wandering within a world: Online contextualized few-shot learning. ICML 2020 Continual Learning Workshop. July 2020.

**2019**

T27 Jointly learnable behavior and trajectory planner for autonomous driving. IROS 2019. Macau, China. Nov 2019.

T28 Meta-learning for more human-like learning algorithms. Columbia University. New York, New York, USA. Oct 2019.

## 2018

T29 Learning to reweight examples for robust deep learning. CIFAR deep learning and reinforcement learning summer school. Toronto, Ontario, Canada. Aug 2018.

T30 Meta-learning for weakly supervised learning. INRIA Grenoble - Rhône-Alpes. Grenoble, France. July 2018.

T31 Learning to reweight examples for robust deep learning. ICML 2018. Stockholm, Sweden. July 2018.

T32 Meta-learning and learning to reweight examples. Max Planck Institute for Intelligent Systems. Tübingen, Germany. June 2018.

T33 SBNNet: Sparse blocks network for fast inference. CVPR 2018. Salt Lake City, Utah, USA. June 2018.

T34 Meta-learning for weakly supervised learning. NEC Laboratories America. Princeton, New Jersey, USA. June 2018.

T35 SBNNet: Sparse blocks network for fast inference. Borealis AI Lab (RBC Research). Toronto, Ontario, Canada. Feb 2018.

## 2017

T36 Meta-learning for semi-supervised few-shot classification. Vector Institute. Toronto, Ontario, Canada. Nov 2017.

T37 End-to-end instance segmentation with recurrent attention. CVPR 2017. Honolulu, Hawaii, USA. July 2017.

T38 Sequence-to-sequence deep learning with recurrent attention. Queen's University. Kingston, Ontario, Canada. May 2017.

T39 Recurrent neural networks. CSC 2541: Sport Analytics Guest Lecture. University of Toronto. Toronto, Ontario, Canada. Jan 2017.

## 2016

T40 Deep dashboard tutorial. University of Guelph. Guelph, Ontario, Canada. Mar 2016.

T41 Deep dashboard tutorial. University of Toronto. Toronto, Ontario, Canada. Feb 2016.

## 2015

T42 Exploring data and models for image question answering. ICML 2015 Deep Learning Workshop. Lille, France. July 2015.

## STUDENT SUPERVISION

### *PhD Students (NYU):*

- Ryan Teehan 2022 - Present
- Alexander Wang 2022 - Present
- Yanlai Yang 2022 - Present

### *Master's Students (NYU):*

- Shantanu Acharya, Rui Chen, Avinav Goel, Anish Mahishi, Rakhee Rakhee, Billy Sun, Ying Wang 2022-2023

### *Undergraduate Students (NYU):*

- Peiqi Liu, Alexa Tartaglini 2022-2023



*Undergraduate Students (University of Toronto):*

- Alexander Li, Jason Sun, Alexander Wang, Yatu Zhang

*Interns (Uber ATG & Waabi):*

- Richard Du, Alexander Li, Yen-chen Lin, Mengfei Liu, Stephen Liu, Ava Pun, Quinlan Sykora, James Tu, Nicholas Vadivelu, Jingkang Wang, Bob Wei, Xinkai Wei, Chris Zhang, Lunjun Zhang

MEDIA COVERAGE

- Researchers Build AI That Builds AI. Quanta Magazine. [[link](#)]. 2022/01/25.
- Researchers from University of Toronto proposed attention attractor networks and implemented incremental few-shot learning. Synced. [[link](#)]. 2019/11/03.
- Autonomous vehicles: U of T researchers make advances with new algorithm. Nina Haikara. U of T News. [[link](#)]. 2018/06/21.
- Industry — Uber proposed SBNet: Leveraging activation block sparsity for speeding up convolutional neural networks. Synced. [[link](#)]. 2018/01/18.
- SBNet: Leveraging activation block sparsity for speeding up convolutional neural networks. Uber Engineering Blog. [[link](#)]. 2018/01/16.