Andrew Szot

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EDUCATION

Georgia Institute of Technology *Aug 2020 – Present*
Ph.D. in Machine Learning
Advised by Dhruv Batra and Zsolt Kira

University of Southern California *Aug 2016 – May 2020*
B.S. in Computer Science, Minor in Mathematics
Trustee Full Tuition Scholarship

PAPERS

[13] "Grounding Multimodal Large Language Models in Actions"
A. Szot, B. Mazoure, H. Agrawal, D. Hjelm, Z. Kira, A. Toshev
arXiv preprint, 2024 [pdf]

[12] "Large Language Models as Generalizable Policies for Embodied Tasks"
A. Szot, M. Schwarzer, H. Agrawal, B. Mazoure, W. Talbott, K. Metcalf, N. Mackraz, D. Hjelm, A. Toshev
International Conference on Learning Representations (ICLR), 2024 [pdf]

[11] "Habitat 3.0: A Co-Habitat for Humans, Avatars and Robots"
X. Puig*, E. Undersander*, **A. Szot***, M. Cote*, T. Yang*, R. Partsey*, R. Desai*, A. Clegg, M. Hlavac, S. Min, V. Vondruš, T. Gervet, V. Berges, J. M. Turner, O. Maksymets, Z. Kira, M. Kalakrishnan, J. Malik, D. Singh Chaplot, U. Jain, D. Batra, A. Rai, R. Mottaghi (* - equal contribution)
International Conference on Learning Representations (ICLR), 2024 [pdf]

[10] "Skill Transformer: A Monolithic Policy for Mobile Manipulation"
H. Huang, D. Batra, A. Rai, **A. Szot**,
International Conference on Computer Vision (ICCV), 2023 [pdf]

[9] "An Extensible, Data-Oriented Architecture for High-Performance, Many-World Simulation"
B. Shacklett, L. G. Rosenzweig, Z. Xie, B. Sarkar, **A. Szot**, E. Wijmans, V. Koltun, D. Batra, K. Fatahalian
SIGGRAPH, 2023 [pdf]

[8] "Adaptive Coordination in Social Embodied Rearrangement"
A. Szot, U. Jain, D. Batra, Z. Kira, R. Desai, A. Rai
International Conference on Machine Learning (ICML), 2023 [pdf]

[7] "Galactic: Scaling End-to-End Reinforcement Learning for Rearrangement at 100k Steps-Per-Second"
V. Berges*, **A. Szot***, D. Chaplot, A. Gokaslan, R. Mottaghi, D. Batra, E. Undersander (* - equal contribution)
Conference on Computer Vision and Pattern Recognition (CVPR), 2023 [pdf]

[6] "BC-IRL: Learning Generalizable Reward Functions from Demonstrations"
A. Szot, A. Zhang, D. Batra, Z. Kira, F. Meier
International Conference on Learning Representations (ICLR), 2023 [pdf]
Spotlight, top 8% of 4900 submissions

[5] "Retrospectives on the Embodied AI Workshop "
M. Deitke, D. Batra, ... **A. Szot**, ..., L. Weihs, J. Wu
arXiv preprint, 2022 [pdf]

[4] "Housekeep: Tidying Virtual Households using Commonsense Reasoning"
Y. Kant, A. Ramachandran, S. Yenamandra, I. Gilitschenski, D. Batra, **A. Szot***, H. Agrawal* (* - equal advising)
European Conference on Computer Vision (ECCV), 2022 [pdf]

[3] "Habitat 2.0: Training Home Assistants to Rearrange their Habitat"
A. Szot, A. Clegg, E. Undersander, E. Wijmans, Y. Zhao, J. Turner, N. Maestre, M. Mukadam, D. Chaplot, O. Maksymets, A. Gokaslan, V. Vondrus, S. Dharur, F. Meier, W. Galuba, A. Chang, Z. Kira, V. Koltun, J. Malik, M. Savva, D. Batra
Neural Information Processing Systems (NeurIPS), 2021 [pdf]
Spotlight, top 3% of 9122 submissions

[2] "Generalizable Imitation Learning from Observation via Inferring Goal Proximity"
Y. Lee*, **A. Szot***, , S. Sun, J. Lim (* - equal contribution)
Neural Information Processing Systems (NeurIPS), 2021 [pdf]

[1] "Generalization to New Actions in Reinforcement Learning"
A. Jain*, **A. Szot***, J. Lim (* - equal contribution)
International Conference on Machine Learning (ICML), 2020 [pdf]

AWARDS

- **NVIDIA Graduate Fellowship Finalist** *2023*
- **GT Institute-Wide Online Teaching Assistant of the Year**: For grad deep learning course. *Fall 2021*
- **NSF GRFP Honorable Mention** *2021*
- **USC Viterbi Fellowship**: Research funding given to the top 20 engineering students per class. *2016-2020*
- **USC Trustee Scholarship**: Full tuition scholarship. *2016-2020*
- **USC Provost Fellowship**: Merit based fellowship for summer research funding. *2019*

EXPERIENCE

Apple Machine Learning Research *Research Scientist Intern* *Feb 2023 – Feb 2024*
Advisor: Dr. Alexander Toshev
Worked on large language models and reinforcement learning for embodied AI (published at ICLR 2024).

Meta AI Research *Research Scientist Intern* *May 2022 – December 2022*
Advisor: Dr. Akshara Rai and Dr. Ruta Desai
Worked on multi-agent reinforcement learning (published at ICML 2023).

Facebook AI Research *Research Scientist Intern* *May 2021 – December 2021*
Advisor: Dr. Franziska Meier
Researched generalization in inverse reinforcement learning (published at ICLR 2023).

CLVR Lab, University of Southern California *August 2018 – June 2020*
Advisor: Prof. Joseph J. Lim
Researched imitation from observation (published at NeurIPS 2021), generalization to new actions in reinforcement learning (published at ICML 2020), and benchmarks for tool usage and physical reasoning in RL (web).

Airbnb *Software Engineering Intern* *May 2018 – August 2018*
Deployed a model to production that predicted and took automated action against account takeover fraud using Scikit-learn, XGBoost, Hive and Presto, resulting in a 50% reduction in account takeover fraud.

Media Communications Lab, University of Southern California *October 2016 – December 2017*
Advisor: Prof. C.C. Jay Kuo
Researched weakly supervised CNNs using clustering approaches to pre-train.

eBay *Software Engineering Intern* *May 2017 – August 2017*
Delivered a data analytics platform using Scala, Spark, Hadoop and Druid to process petabytes of eBay metrics.

SERVICE AND TEACHING

Workshop / Challenge Organization

- Lead organizer of NeurIPS 2022 "Habitat Rearrangement Challenge" [link] *2022*
- Organizer at Embodied AI Workshop at CVPR 2022 *2022*

Teaching

- Graduate Deep Learning Teaching Assistant (CS 7643, won outstanding TA award) *Fall 2021*

Reviewing

- NeurIPS [2022,2023], ICLR [2022,2024], ICML [2023,2024], ICCV 2021, IROS 2021, CVPR 2022

Mentoring

- Haytham Huang (GT Undergraduate) *Spring 2022 – Spring 2023*
  Mentored on "Skill Transformer: A Monolithic Policy for Mobile Manipulation" (ICCV 2023).

- Abhinav Harish (GT Masters) *Spring 2022 – Spring 2024*
- Sriram Yenamandra (GT Masters): *Fall 2021 – Fall 2022*
  Mentored on "Housekeep: Tidying Virtual Households using Commonsense Reasoning" (ECCV 2022).
- Arun Ramachandran (GT Masters) *Fall 2021 – Fall 2022*
  Mentored on "Housekeep: Tidying Virtual Households using Commonsense Reasoning" (ECCV 2022).

SELECTED PRESS COVERAGE

- "Meta's Habitat 3.0 simulates real-world environments for intelligent AI robot training", by Mike Wheatley, *Silicon Angle*, Oct 20, 2023 [link]
- "Embodied AI spins a pen and helps clean the living room in new research", by Devin Coldewey, *Tech Crunch*, Oct 20, 2023 [link]
- "How Facebook's AI is training home robots to tackle the chores you hate", by Katie Collins, *CNET*, Jun 30, 2021 [link]
- "Facebook updates Habitat environment to train 'embodied AI'", by Kyle Wiggers, *VentureBeat*, Jun 30, 2021 [link]