Mycal Tucker

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EDUCATION

M.I.T.
PhD Aug 2018 - Present
Aero/Astro
Cum. GPA: 5.0/5.0

M.I.T.
MEng. Sep 2016
CS in AI
Cum. GPA: 5.0/5.0

M.I.T.
BS June 2015
Double Major:
    Computer Science
    Aero/Astro Engineering
Cum. GPA: 4.9/5.0

SKILLS

Languages:
Java, Python
Tools:
Git, Vim
Independently Learned:
C++, R, Matlab/Simulink

COURSEWORK

Computational Psycholinguistics
Design and Analysis of Algorithms
Underactuated Robotics
Cognitive Robotics

AWARDS

Winner of Morsa prize for best
    application of comp. sci. to
    aero/astro engineering
Member of Tau Beta Pi
Member of Eta Kappa Nu

WORK AND RESEARCH EXPERIENCE

Massachusetts Institute of Technology   Aug 2018 - Present
PhD Candidate in the Aero/Astro Department   Cambridge, MA
- Researched interpretable/fair AI tools
- Teaching Assistant for Real-Time Systems and Software

Amazon Robotics – Software Developer   Aug 2016 – Aug 2018
Software Developer on Advanced Robotics team   North Reading, MA
- Designed and implemented order allocation algorithms for new Fulfillment Center designs
- Promoted to Software Eng. II within 1.5 years

Massachusetts Institute of Technology   Aug 2015 – Aug 2016
Grad. Student Researcher in Robust Robotics Group   Cambridge, MA
- Extended natural-language grounding model to autonomously learn new phrases and objects, embodied on mobile robot
- Teaching Assistant for Intro. to AI; ended semester as highest-rated TA in CS department.

PUBLICATIONS

- M. Tucker, Y. Zhou, and J. Shah. Adversarially Guided Self Play for Adopting Social Conventions
- M. Tucker, A. Derya, R. Paul, G. Stein, and N. Roy. Learning Unknown Groundings for Natural Language Interaction with Mobile Robots. In International Symposium on Robotics Research, Chile, 2017.
- M. Tucker (2016). DCG-UPUP-Away: Automatic Symbol Learning through Grounding to Unknowns. (Master's Thesis), MIT, Cambridge, Massachusetts.

ONGOING INTERESTS

Neural Language Models Besides outputting realistic text, what have neural language models learned? Is there evidence for them learning and leveraging linguistic principles?

Interpretable (Emergent) Communication Neural models trained in RL settings learn communication. How do they encode information, and can we make it understandable to humans?

Discovery through NNs Neural networks are great function approximators and can outperform humans at some tasks. Can we make them learn a pattern and then teach it to humans?