

Ayush Shrivastava

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EDUCATION

- **Georgia Institute of Technology** Atlanta, USA
● *Master of Science in Computer Science (Specialization: Machine Learning)* Aug 2019 – Present
Expected Graduation: May 2021; Expected GPA: 4.0/4.0
- **Indian Institute of Technology (BHU) Varanasi** Varanasi, India
● *Bachelor of Technology in Computer Science and Engineering* Jul 2014 – May 2018
GPA: 9.20/10.0

RESEARCH INTERESTS

Computer Vision, Deep Learning, Natural Language Processing, Robotics

AWARDS AND ACHIEVEMENTS

- Awarded **Amazon Post-Internship Fellowship**
- Travel Scholarship for **Google Summer of Code Mentor Summit 2018**, Google Sunnyvale
- Presented our project, **Memento** at **Microsoft's code.fun.do SHOWCASE 2017**; received Travel Scholarship
- Winner, **code.fun.do 2017**; hackathon conducted by **Microsoft**
- Runner up, **code.fun.do 2016**; hackathon conducted by **Microsoft**
- Winner, Enigma; ML hackathon conducted by CodeFest 2016 (Computer Science Fest, IIT BHU)
- Secured **All India Rank 859** in IIT JEE (Advanced) 2014 among 1.5 Lakh students (among top 0.5%)
- **Vibrant Academy Scholarship recipient** (2012 - 2014)

PUBLICATIONS (* DENOTES EQUAL CONTRIBUTION)

- **Sim-to-Real Transfer for Vision-and-Language Navigation** [[paper link](#)]
Peter Anderson, Ayush Shrivastava, Joanne Truong, Arjun Majumdar, Devi Parikh, Dhruv Batra, Stefan Lee
Conference on Robot Learning (CoRL) 2020
- **Improving Vision-and-Language Navigation with Image-Text Pairs from the Web** [[paper link](#)]
Arjun Majumdar, Ayush Shrivastava, Stefan Lee, Peter Anderson, Devi Parikh, Dhruv Batra
*European Conference on Computer Vision (ECCV) 2020, **Spotlight (Top 5%)***
ICML 2020 LaReL Workshop, Best Paper Honorable Mention
- **Chasing Ghosts: Instruction Following as Bayesian State Tracking** [[paper link](#)]
Peter Anderson*, Ayush Shrivastava*, Devi Parikh, Dhruv Batra, Stefan Lee
Neural Information Processing Systems (NeurIPS) 2019

WORK EXPERIENCE

- **Amazon Alexa AI** Remote
Applied Scientist Intern | Supervisor: [Dilek Hakkani-Tür](#), Conversational Modelling Team May 2020 - Aug 2020
 - Building agents that solve a navigation task by holding dialog with each other in a cooperative setting.
- **Georgia Institute of Technology** Atlanta, GA
Graduate Research Assistant | Supervisor: [Prof. Devi Parikh](#) Aug 2019 - Current
 - Working on problems related to Embodied AI and Vision & Language
 - Worked on using BERT-style models to better ground navigation instruction in 3D environments. Published at *ECCV 2020*.
 - Transferred instruction following agents trained in simulation to robots in real world. Published at *CoRL 2020*.

- Georgia Institute of Technology** Atlanta, GA
 Visiting Research Scholar | Supervisor: *Prof. Devi Parikh, Prof. Dhruv Batra* Aug 2018 - May 2019
 - Worked on solving navigation instruction following in 3D environments by following an ideal agent trajectory. Published at *NeurIPS 2019*.
- Google Summer of Code 2018** Atlanta, GA
 Mentor | *CloudCV* organisation Apr 2018 - Aug 2018
 - Mentored a student for *Fabrik* project. Added support for importing/exporting models from TensorFlow. Built real time collaboration feature where multiple users can edit or review the model at the same time.
- Nanyang Technological University [code]** Singapore
 Research Intern | Supervisor: *Prof. Lam Siew Kei, Prof. Thambipillai Srikanthan* May 2017 - Jul 2017, Dec 2017
 - Built fast semantic segmentation models for autonomous driving by reducing complexities in model architecture. Explored and combined different deep learning models like PSPNet and MobileNets.
- Defence Research and Development Organization** New Delhi, India
 Research Intern | Supervisor: *Dr. Saibal K. Pal* May 2016 - Jul 2016
 - Implementation and performance analysis of Extreme Learning Machines and its variants on object detection and blind blur detection.

SELECTED PROJECTS

- Fabrik: Build, visualize, and design neural nets in browser** [<https://github.com/Cloud-CV/Fabrik>]
 - Online collaborative platform to build, visualize and train deep learning models via a simple drag-and-drop interface; **40+ open source contributors; 900+ stars; 230+ forks**
- Real-time Uniform Passenger Distribution for Metro Transport Systems using Machine Learning and Fog Computing**
B.Tech Thesis Project | Supervisor: Prof. Hari Prabhat Gupta
 - Developed a dynamic programming solution for optimal crowd distribution of onboard passengers in metro, assuming inter-carriage travel is allowed and integrated it with fog architecture in distributed setting.
 - Developed a solution to alert passengers about crowded carriages using history of crowd distribution.
- Memento: Never forget a thing!** [poster] [demo]
 - Built an Android app which acts as an *assistive memory*. It captures images, records audio and save them in the processed form of events of a day which can be later searched and retrieved.
- Identification of User Transport using Smartphone Sensors** [poster]
 - Built an app for collection of a new dataset of smartphone sensor values for transport mode detection.
 - Hierarchical classification of transport modes (stationary, walking, bicycle, motorbike, car, bus, train, airplane) using GPS, accelerometer, gyroscope sensors.

SERVICE ROLES AND ACADEMIC ACTIVITIES

Challenge Organization

- VQA Challenge 2019, 2020
- Visual Dialog Challenge 2018, 2019, 2020

Workshop Organization

- Visual Question Answering and Dialog Workshop CVPR 2019, CVPR 2020

Teaching Assistant

- ITW1: Python and Shell Programming Spring 2017
- CS 101: Computer Programming and Linux Fall 2016