

EDUCATION

- Georgia Institute of Technology** Atlanta, USA
Masters in Computer Science; Current GPA: 4.0/4.0; Expected Graduation: May 2021 Aug. 2019 - Present
- JSS Academy Of Technical Education** Noida, India
Bachelor of Technology in Computer Science and Engineering; Aggregate: 80.44% with Hons. Aug. 2014 - June 2018

PROJECTS

- EvalAI**: Built an open source platform for evaluating and benchmarking AI models. We have hosted **85+ AI challenges** with **8000+** users, who have created **90,000+ submissions**. The project has **950+ stars**, **450+ forks** and, **100+ contributors** on Github. More than **25 organizations** are using it including **Google, Facebook, IBM, Intel, eBay etc.** from industry and research labs from MIT, Stanford, CMU, Georgia Tech, etc.
- Visual Question Answering Demo (VQA)**: A web demo for VQA task in which given an image and a question about the image, the AI model provides a natural language answer. It is used by **100k+** users over the last 2 years.
- Visual Chatbot Demo**: A chatbot based on visual dialog model in which given an image, a dialog history, and a follow-up question about image, the chatbot answers the next question. It is used by **170k+** users over the last 2 years.
- Vilbert Multi-Task Demo**: A web demo of a single model trained on 12 datasets from four broad categories of task including visual question answering, caption-based image retrieval, grounding referring expressions, and multi-modal verification. It is used by **20k+** users over the last few months.
- Trick or TReAT: Thematic Reinforcement for Artistic Typography Web Demo**
 Given an input word (e.g. exam) and a theme (e.g. education), the individual letters of the input word are replaced by cliparts relevant to the theme which visually resemble the letters.
- JSS InfoConnect**: Developed and introduced a web platform to act as an interaction medium among all students, faculties, and management staff in college. It serves **1000+ daily active users**, **20,000+ overall users**.

PUBLICATIONS

* refers to equal contribution

- EvalAI: Towards Better Evaluation Systems for AI Agents** **AI Systems Workshop (SOSP 2019)**
 D. Yadav, **R. Jain**, H. Agrawal, P. Chattopadhyay, T. Singh, A. Jain, S. Singh, S. Lee, D. Batra
- nocaps: novel object captioning at scale** **ICCV 2019**
 H. Agrawal*, K. Desai*, Y. Wang, X. Chen, **R. Jain**, M. Johnson, D. Batra, D. Parikh, S. Lee, P. Anderson
- Evaluating visual and text explanations in an interactive, goal-driven human-AI task** *Under Review*
 A. Chandrasekaran, **R. Jain**, K. Desai, K. Moffitt, J. Miller, D. Diller, B. Ferguson, D. Parikh
- Dialog without Dialog: Learning Image-Discriminative Dialog Policies from Single-Shot Question Answering Data** *Under Review*
 M. Cogswell*, J. Lu*, **R. Jain**, S. Lee, D. Batra, D. Parikh

EXPERIENCE

- Georgia Institute of Technology** Atlanta, GA
Graduate Research Assistant advised by Prof. Dhruv Batra and Prof. Devi Parikh Aug. 2019 - Present
 - Evaluating RL¹ agents**: To simplify and standardize the process of evaluating RL models by developing and managing a widely recognized evaluation platform for reproducibility of results, maintaining evaluation consistency, evaluation of model's code, and to measure constant progress for pushing the frontiers of AI.
 - GuessWhich²**: Evaluating the role of interpretable explanations towards making a model predictable to a human. We studied if the textual or visual explanations from an AI model in the context of an interactive, goal-driven, collaborative human-AI task help humans to predict its behavior.

¹Reinforcement Learning

²<https://arxiv.org/abs/1708.05122>

- eBay – Structured Data and Applied Research Team**

San Jose, CA

May. 2020 - Aug. 2020

Software Engineering Intern under [Roman Maslovskis](#) and [Uwe Mayer](#)

 - Predicting and Evaluating attribute values in listings:** Given an image, and a text description about the listing on eBay the task is to predict the missing attributes in the listing. For instance, predicting the missing color or brand attribute in the listing. I built an end-to-end system for processing visual and textual data along with training AI models. I also trained an early fusion model of image and text data which gave an accuracy of 78%, 83% on the test dataset for color and brand attribute respectively.
- Machine Learning and Perception Lab, Georgia Tech**

Atlanta, GA

Aug. 2018 - June 2019

Visiting Research Scholar advised by [Prof. Dhruv Batra](#) and [Prof. Devi Parikh](#)

 - nocaps:** To encourage the development of image captioning models that can learn visual concepts from alternative data sources, such as object detection datasets, we present the first large-scale benchmark for this task. Dubbed nocaps, for novel object captioning at scale, our benchmark consists of 166,100 human-generated captions describing 15,100 images from the Open Images validation and test sets containing more than 500 objects, out of which more than 400 objects are never described in COCO captions dataset.
- Google Summer of Code (GSoC) 2017 - 2020**

Atlanta, GA

May. 2017 - Aug. 2020

Organization Administrator, Organization Mentor, Student Developer

 - 2017:** Selected as a GSoC student to build [new features](#) for hosting AI challenges in a streamlined manner, implemented REST-API's, frontend and several analytic features for both participants and hosts in EvalAI.
 - 2018:** Mentored a student to design a command line tool ([evalai-cli](#)) for EvalAI which lets the users, to install and use evalai as a python package.
 - 2019:** Led a team of 10+ mentors and students under [CloudCV](#) organization to accomplish tasks proposed in [GSoC 2019 Proposal](#).
 - 2020:** Leading a team of 10+ mentors and students under [CloudCV](#) organization to build an open-source software for evaluating machine learning models in real-time on static/dynamic datasets.
- iAugmentor Labs**

Gurgaon, India

June. 2016 - August 2016

Software Developer Intern, Machine Learning

 - Developed a product which takes a video answer of a job interview question as an input and outputs the accuracy on the smiling behavior of the user by training an SVM classifier along with a web demo of it for clients.
- Nibble Computer Society**

Noida, India

Feb. 2015 - June 2018

Organizing Member

 - Organized multiple code labs, seminars, workshops on OOPs, Advanced C, C++, Google Summer of Code, Git etc. and mentored 30+ undergraduate students on software development along with organizing college's annual fest.

PROGRAMMING SKILLS

- Languages:** Python, C, C++, Javascript
- Frameworks:** PyTorch, Tensorflow, Django, Flask, PyTest, Celery, RabbitMQ, Scrapy, AngularJS
- DevOps:** Amazon Web Services, Google Cloud, Kubernetes, Docker
- Version Control:** Git
- Human Computation:** Amazon Mechanical Turk
- Databases:** MySQL, PostgreSQL, Redis

EXTRA CURRICULAR ACTIVITIES

- Invited speaker**, [Embodied AI Workshop](#), [CVPR 2020](#), [\[Talk\]](#)
- Co-organizer**, [Visual Dialog Challenge](#), [CVPR 2020](#)
- Invited speaker** at [Habitat Workshop](#), [CVPR 2019](#)
- Co-organizer**, [Visual Question Answering and Dialog Workshop](#), [CVPR 2019](#)
- Co-organizer**, [Visual Dialog Challenge](#), [CVPR 2019](#)

REFERENCES

- [Prof. Dhruv Batra](#), Georgia Tech / Facebook AI Research (email: dbatra@gatech.edu)
- [Prof. Devi Parikh](#), Georgia Tech / Facebook AI Research (email: parikh@gatech.edu)
- [Dr. Roman Maslovskis](#), Director, Applied Research at eBay (email: rmaslovskis@ebay.com)
- [Dr. Uwe Mayer](#), Senior Data Scientist at eBay (email: uwemayer@ebay.com)

**** Links in blue are hyperlinks**