

## EDUCATION

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- **Georgia Institute of Technology** Atlanta, USA  
*Masters in Computer Science; Current GPA: 4.0/4.0* 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

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- **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 is open source with **100+ contributors**, **950+ stars**, **450+ forks** and **1.8M+ pageviews**. Some of the organizations using it are **Google, Facebook, IBM, Intel, eBay etc.** and research labs from **MIT, Stanford, CMU, Georgia Tech, etc.** also use it.
- **Fabrik**: An online collaborative platform to build, visualize and train deep learning models via a simple drag-and-drop interface in web browser. It has **45+ open source contributors**, **1000+ stars**, **230+ forks**.
- **Visual Question Answering Demo (VQA)**: A web demo for VQA task in which given an image and a natural language question about the image, the AI model provides an accurate natural language answer in real-time. It has **35,000+ pageviews** and **18,000+ unique visitors** have used it.
- **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 has **120k+ pageviews** and **60,000+ unique visitors** have used it.
- **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 and compared to independently trained single-task models, this represents a reduction from approximately 3 billion parameters to 270 million while simultaneously improving performance by 2.05 points on average across tasks. It has **2k+ pageviews** and **1200+ unique visitors** have used it.
- **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 an officially recognized 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**, **20,000+ notices** and **more than 3 million page views**.

## EXPERIENCE

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- **Georgia Institute of Technology** Atlanta, GA  
*Graduate Research Assistant advised by Prof. Dhruv Batra and Prof. Devi Parikh* Aug. 2019 - Present
  - **Evaluating RL agents**: Building large scale software pipeline to evaluate code of machine learning models. The model will be uploaded in the form of docker image, run against test environment on a compute cluster and the results are shown on a single leaderboard.
  - **GuessWhich**: 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 helps humans to predict the it's behavior in a goal-driven AI task.
- **eBay – Structured Data and Applied Research Team** San Jose, CA  
*Software Engineering Intern under Roman Maslovskis and Uwe Mayer* May. 2020 - Aug. 2020
  - **Predicting and Evaluating aspect values in listings**: Given an image, and a text description about the listing on eBay the task is to predict the missing aspects about the listing, for instance predict the missing color or brand aspect in the listing. I built an end-to-end system for processing and training the AI models using textual and visual data and also trained early fusion models with an accuracy of 78%, 83% on the test dataset for color aspect and brand aspect respectively.

- Google Summer of Code (GSoC) '20, '19, '18, '17** Atlanta, GA  
 Organization Administrator, Organization Mentor, Student Developer May. 2017 - Aug. 2020
  - 2020:** Leading a team of 10+ mentors and students under **CloudCV** organization to build a open-source automated software for evaluating machine learning models in real-time on static/dynamic datasets.
  - 2019:** Led a team of 10+ mentors and students under **CloudCV** organization to accomplish tasks proposed in **GSoC 2019 Proposal**.
  - 2018:** Mentor a student to design a command line tool (**evalai-cli**) for EvalAI which lets the participants to install and use evalai as a python package.
  - 2017:** Selected as a GSoC student to build **new features** for hosting AI challenges in streamlined manner, implemented several analytic features for both participants and hosts in EvalAI.
- Machine Learning and Perception Lab, Georgia Tech** Atlanta, GA  
 Visiting Research Scholar advised by Prof. Dhruv Batra and Prof. Devi Parikh Aug. 2018 - June 2019
  - 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.
- iAugmentor Labs** Gurgaon, India  
 Software Developer Intern, Machine Learning June. 2016 - August 2016
  - Responsible for developing a product which takes a video (an answer of a job interview question) as an input and outputs the accuracy on smiling behavior of the user by training an SVM classifier.
  - Implemented a web-based prototype for our trained model to present it to clients.
- Nibble Computer Society** Noida, India  
 Organizing Member Feb. 2015 - June 2018
  - 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. I was also responsible for organizing college's annual techno-cultural fest Zealicon.

## 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

## PROGRAMMING SKILLS

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

## EXTRA CURRICULAR ACTIVITIES

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- **Invited speaker**, Embodied AI Workshop, **CVPR 2020**, **Talk**
- **Co-organizer**, Visual Dialog Challenge, **CVPR 2020**
- **Presented EvalAI** at Habitat Workshop, **CVPR 2019**
- **Co-organizer**, Visual Question Answering and Dialog Workshop, **CVPR 2019**
- **Co-organizer**, Visual Dialog Challenge, **CVPR 2019**

## FELLOWSHIP AND AWARDS

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- Travel Scholarship for **Google Summer of Code Mentor's Summit**, '18 and '19
- Travel Scholarship for **Google Code In Summit**, '18
- Winner, **SHE Hacks Hackathon**, '16
- **Governer Award recipient**, '10

## REFERENCES

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