

ABHAY ZALA

aszala.com | [Google Scholar](https://scholar.google.com/citations?user=aszala) | [GitHub](https://github.com/aszala) | aszala@cs.unc.edu | zala.abhay@gmail.com

EDUCATION

- | | | |
|-----------|---|------------------------|
| MS | University of North Carolina at Chapel Hill
Major: Computer Science
Advisor: Professor Mohit Bansal | May 2022 — Present |
| BS | University of North Carolina at Chapel Hill
Major: Computer Science | August 2019 — May 2022 |

RESEARCH EXPERIENCE

- | | |
|---|--------------------------|
| University of North Carolina at Chapel Hill
Advisor: Professor Mohit Bansal | September 2019 — Present |
|---|--------------------------|
- Vision-Language Navigation, 3D Pose Understanding and Image Captioning, Visual Commonsense Reasoning, Multimodal Text-to-Image Analysis, and Video/Moment Retrieval, Segmentation, and Captioning
 - Dataset Generation/Creation, Simulator Development
 - Led technical collaborations on a research paper with Meta AI researchers
 - Paper Writing

PUBLICATIONS

* Indicates equal contribution

6. **Visual Programming for Text-to-Image Generation and Evaluation**
Jaemin Cho, [Abhay Zala](#), Mohit Bansal
[\[preprint\]](#)
5. **Hierarchical Video-Moment Retrieval and Step-Captioning**
[Abhay Zala](#)*, Jaemin Cho*, Satwik Kottur, Xilun Chen, Barlas Oğuz, Yasher Mehdad, Mohit Bansal
Proceedings of CVPR 2023 [\[pdf\]](#)
4. **DALL-Eval: Probing the Reasoning Skills and Social Biases of Text-to-Image Generative Models**
Jaemin Cho, [Abhay Zala](#), Mohit Bansal
[\[preprint\]](#)
3. **CoSim: Commonsense Reasoning for Counterfactual Scene Imagination**
Hyoungun Kim*, [Abhay Zala](#)*, Mohit Bansal
Proceedings of NAACL 2022 [\[pdf\]](#)

2. **FixMyPose: Pose Correctional Captioning and Retrieval**
Hyounghun Kim*, Abhay Zala*, Graham Burri, Mohit Bansal
Proceedings of AAAI 2021 [[pdf](#)]
1. **ArraMon: A Joint Navigation-Assembly Instruction Interpretation Task in Dynamic Environments**
Hyounghun Kim, Abhay Zala, Graham Burri, Hao Tan, Mohit Bansal
Findings of EMNLP 2020 [[pdf](#)]

PRESENTATIONS AND WORKSHOPS

Paper Presentation, “Hierarchical Video-Moment Retrieval and Step-Captioning”
CVPR, 2023.

Research Presentation, “Video Moment-Retrieval and Moment-Captioning on Classroom Videos”
EngageAI SV, 2023.

Paper Presentation, “CoSim: Commonsense Reasoning for Counterfactual Scene Imagination”
NAACL, 2022.

Paper Presentation, “FixMyPose: Pose Correctional Captioning and Retrieval”
AAAI, 2021.

Workshop, “ArraMon: A Joint Navigation-Assembly Instruction Interpretation Task in Dynamic Environments”
SpLU, 2020.

INDUSTRY EXPERIENCE

EngageAI Researcher	March 2023 – Present
-------------------------------	----------------------

ACL Year-Round Mentorship Organizer	October 2021 — Present
---	------------------------

MetaAI Research Paper Collaboration Researcher	February 2022 – March 2023
--	----------------------------

Capital One Machine Learning Intern	June 2022 — August 2022
---	-------------------------

Éclat Engineering Software Developer Intern	December 2021 — January 2022
---	------------------------------

HONORS AND AWARDS

Outstanding Undergraduate Researcher Award, Honorable Mention
Computing Research Association (CRA)

2021

SKILLS

(#) Indicates years of experience

Programming: Python (5+), Java (6+), C# (5+), C/C++ (2+), Git (5+), PyTorch (3+), JavaScript (6+), OpenGL (1+), Svelte (2+), jQuery (5+), NodeJS (4+), LaTeX (3+), HTML/CSS (6+), PHP (1+), SQL (1+), MATLAB (1)

Platforms: Unity Engine (5+), Amazon Mechanical Turk (3+), Docker (4+), Kubernetes (1+), GitHub (5+), Amazon Web Services (3+), Google Cloud (2+), IBM Cloud (1+), Linux (5+), Windows (5+), MacOS (2+), Google Firebase (4+), Adobe Suite (7+), Autodesk Suite (7+), Microsoft Office Suite (9+), Overleaf (3+)

Applications: Machine Learning, Natural Language Processing, Computer Vision, Robotics, Dataset Creation, Simulator Development, Website Development, Software Development, Database Management

RELEVANT COURSEWORK

Java Programming, C Programming, Assembly Programming and Hardware Design, Data Structures, Models of Language and Computation, 2D Computer Graphics, Algorithms and Analysis, Modern Web Programming, Data Science, Programming Language Concepts, Compilers, Computational Photography, Machine Learning, Robotics

Linear Algebra, Calculus (I – III), Mechanics and Relativity, Discrete Mathematics, Probability, Data Models and Inference

OTHER

- Site Developer/Maintainer of nlp.cs.unc.edu
- Site Developer/Maintainer of perfect-type.com
- Site Maintainer of murgelab.cs.unc.edu
- Developed Social Media Platform for Networking
- Developed Online Peer Tutoring Service with AI Assistance
- Developed TV Show and Movie Showcase Website
- Developed VR Healthcare Training System
- Developed AI assistant for Presentations
- ACL Year-Round Mentorship Logo Designer

LANGUAGES

English: Native Language

Spanish: Novice Listener, Speaker, Reading, Writing

Gujrati: Intermediate Listener, Novice Speaker, Reading, Writing

REFERENCES

Mohit Bansal, Associate Professor
University of North Carolina at Chapel Hill

Hyoungun Kim, Assistant Professor
Ulsan National Institute of Science and Technology

Shruti Patel, Senior Machine Learning Engineer
Capital One

Yegor Kryukov, Senior Manager for Solutions NLP services
Capital One