

TEJAS GOKHALE

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RESEARCH INTERESTS

I work on computer vision, machine learning, and natural language processing – very often at the wonderful intersection of the three disciplines. My domain expertise lies in *semantic vision*, i.e. building computer vision algorithms that assign “meaning” to what cameras see, with special focus on analyzing and improving the robustness and generalizability of such algorithms.

EDUCATION

Ph.D.	Computer Engineering	Advisors: Yezhou Yang, Chitta Baral	2018–2023
M.S.	Electrical and Computer Engineering	Advisor: Aswin Sankaranarayanan	2016–2017
B.E.(Honors)	Electronics and Instrumentation		2011–2015

PUBLICATIONS

📄 Conference Proceedings

Semantically Distributed Robust Optimization for Vision-and-Language Inference

T. Gokhale, A. Chaudhary, P. Banerjee, C. Baral, Y. Yang

<https://arxiv.org/abs/2110.07165>

ACL Findings 2022

Generalized but not Robust? Comparing the Effects of Data Modification Methods on Out-of-Domain Generalization and Adversarial Robustness

T. Gokhale, S. Mishra, M. Luo, B. Sachdeva, C. Baral

<https://arxiv.org/abs/2203.07653>

ACL Findings 2022

Unsupervised Natural Language Inference Using PHL Triplet Generation

N. Varshney, P. Banerjee, T. Gokhale, C. Baral

<https://arxiv.org/abs/2110.08438>

ACL Findings 2022

To Find Waldo You Need Contextual Cues: Debiasing Who’s Waldo

Y. Luo, P. Banerjee, T. Gokhale, Y. Yang, C. Baral

<https://arxiv.org/abs/2203.16682>

ACL Findings 2022

Improving Biomedical Information Retrieval with Neural Retrievers

M. Luo, A. Mitra, T. Gokhale, C. Baral

<https://arxiv.org/abs/2201.07745>

AAAI 2022

Weakly Supervised Relative Spatial Reasoning for Visual Question Answering

P. Banerjee, T. Gokhale, Y. Yang, C. Baral

<https://arxiv.org/abs/2109.01934>

ICCV 2021

WeaQA: Weak Supervision via Captions for Visual Question Answering

P. Banerjee, T. Gokhale, Y. Yang, C. Baral

<https://arxiv.org/abs/2012.02356>

ACL Findings 2021

Self-Supervised Test-Time Learning for Reading Comprehension

P. Banerjee, T. Gokhale, C. Baral

<https://arxiv.org/abs/2103.11263>

NAACL 2021

Attribute-Guided Adversarial Training for Robustness to Natural Perturbations

T. Gokhale, R. Anirudh, B. Kailkhura, J. Thiagarajan, C. Baral, Y. Yang

<https://arxiv.org/abs/2012.01806>

AAAI 2021

Mutant: A Training Paradigm for Out-of-Distribution Generalization in Visual Question Answering

T. Gokhale, P. Banerjee, C. Baral, Y. Yang

<https://arxiv.org/abs/2009.08566>

EMNLP 2021

Video2commonsense: Generating commonsense descriptions to enrich video captioning

Z. Fang, T. Gokhale, P. Banerjee, C. Baral, Y. Yang

<https://arxiv.org/abs/2003.05162>

EMNLP 2021

VQA-LOL: Visual question answering under the lens of logic

T. Gokhale, P. Banerjee, C. Baral, Y. Yang

<https://arxiv.org/abs/2002.08325>

ECCV 2020

🕒 Workshop Papers / Pre-Prints

Halluci-Net: Scene Completion by Exploiting Object Co-occurrence Relationships

K. Kulkarni, T. Gokhale, R. Singh, P. Turaga, A. Sankaranarayanan

<https://arxiv.org/abs/2004.08614>

AI for Content Creation @ CVPR 2021

Cooking With Blocks: A Recipe for Visual Reasoning on Image-Pairs

T. Gokhale, S. Sampat, Z. Fang, Y. Yang, C. Baral

Long version: <https://arxiv.org/abs/1905.12042>

Vision Meets Cognition @ CVPR 2019

🕒 Proposal Writing

Decentralized Authorship Attribution

PI: Chitta Baral

(Conceptualized and wrote 1 of 3 research plans)

Submitted to IARPA, 2022

An Active Approach for Data Engineering to Improve Vision-Language Tasks

PI: Yezhou Yang, Co-PI: Chitta Baral

(Conceptualized and wrote 2 of 3 research plans)

Accepted and Funded by NSF, 2021

RESEARCH EXPERIENCE

Microsoft Research

Research Intern

May 2021 - Aug 2021
(Mentor: Hamid Palangi)

Lawrence Livermore National Labs, Livermore CA

Research Scholar

May 2021 - Aug 2021
(Mentor: Rushil Anirudh)

Lawrence Livermore National Labs, Livermore CA

Research Scholar

May 2020 - Aug 2020
(Mentor: Rushil Anirudh)

Snap Inc., Seattle

Research Intern

May 2018 - Aug 2018
(Mentors: Guru Krishnan & Shree Nayar)

Carnegie Mellon University

Graduate Student Researcher

Jan 2017 - May 2018
(Advisor: Aswin Sankaranarayanan)

TEACHING

Teaching Associate, Arizona State University

CSE310: Data Structures & Algorithms,

Spring 2020, ASU

CSE408: Multimedia Information Systems,

Spring 2019, ASU

CSE110: Introduction to Programming,

Fall 2018, ASU

Course Development CSE591: Frontier Topics in Vision & Language [\[YouTube\]](#) [\[website\]](#) Spring 2021
I initiated the development of this class as a series of (weekly) invited seminars, followed by paper reading, discussion, and brainstorming in the classroom.

Student Instructor, BITS Pilani Goa Campus

CTE: Advanced Image Processing,

Spring 2015, BITS Pilani

MENTORING

Ethan Wisdom,

Ph.D. CS [current]

Maitreya Patel,

M.S. CS [current]

Huiliang Shao,

M.S. CE 2022 [current]

Abhishek Chaudhary,

M.S. CS 2021 [\[thesis\]](#)

Capstone Mentor, mentored five B.S. CS students in projects on vision & language

AY 2019-20

Project Mentor, CSE598 - Perception in Robotics, ASU

Spring 2022

Project Mentor, CSE576 - Natural Language Processing, ASU

Fall 2018

INVITED TALKS

Mar'22, (*Guest Lecture*) "Introduction to Generalization in Semantic Vision"

ASU CSE 598

Sep'21, (*Invited*) "Robust Visual Understanding",

ASU ML Club

Aug'19, "Vision Beyond Pixels", IJCAI Doctoral Consortium,

IJCAI 2019, Macao

Jul'19, "Reasoning about Objects and Actions via Block-Play",

Telluride 2019

Apr'18, (*Invited*) "Deep Learning Methods in Imaging and Computer Vision",

BITS Goa

SERVICE / LEADERSHIP

Reviewer: NeurIPS (2022), ICLR (2022), ECCV (2022), AAAI (2021-22), *ACL/Rolling Review (2021-22), WACV (2022), IROS (2022), ICRA (2019-22), IEEE RA-L (2020), Springer MVAP (2020)

Organizer, O-DRUM: Workshop on Open-Domain Retrieval under Multi-Modal Settings, [\[Website\]](#), CVPR '22

Organizer, 2021 Frontiers of V&L Seminar Series,

[\[Website\]](#), ASU

Founder, Summer Vision Reading Group,

[\[Website\]](#), multi-university initiative

Volunteer, 2019 Southwest Robotics Symposium,

Tempe AZ

Volunteer, International Conference on Machine Learning 2020,

Virtual

Advisor, ASU Machine Learning Club,

ASU

Mentor, Graduate Student Mentorship Program,

ASU

Student Mentor, Peer Mentorship Program

BITS Pilani

AWARDS

CVPR 2022 [Doctoral Consortium](#)

CVPR 2022

ICLR [Highlighted Reviewer](#)

ICLR 2022

SCAI Doctoral Fellowship (ASU),

Spring 2022, Spring 2021, Spring 2020

Engineering Graduate Fellowship, (ASU Engineering),	Spring 2020
Graduate College Travel Award, (ASU),	for ECCV 2022, ICCV 2021, EMNLP 2020, ECCV 2020
IJCAI 2019 Doctoral Consortium ,	IJCAI 2019
Inducted, IEEE Eta Kappa Nu, Sigma Chapter (CMU),	Jan 2017
National Talent Scholarship (Govt. of India),	2007-2015

REFERENCES

Yezhou Yang	Assistant Professor	Arizona State University,	yz.yang@asu.edu
Chitta Baral	Professor	Arizona State University,	chitta@asu.edu
Rushil Anirudh	Research Scientist	Lawrence Livermore National Laboratory	anirudh1@llnl.gov