Anupam Guha

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Education

Doctor of Philosophy in Computer Science
University of Maryland, College Park, MD, USA — *August 2011 to December 2017, GPA: 4.0/4.0*

Master of Science in Computer Science
Georgia Institute of Technology, Atlanta, GA, USA — *August 2009 to August 2010, GPA: 4.0/4.0*

Bachelor of Technology in Information Technology
Guru Gobind Singh Indraprastha University, New Delhi, India — *2005–2009, CPI: 83%, First Class with Distinction*

Academic Appointments

Assistant Professor at Centre for Policy Studies, IIT Bombay — *September 2019–current*

I work on AI policy. How AI systems, especially which work with natural language, impact and are impacted by labour, capital, and social-political-economic relationships, and how should policymaking take cognisance of it. This work has connections to the political economy of automation. I am also interested in and at times work on multimodal AI systems, computational linguistics, the political economy of "AI criticism", and other allied problems.

Publications

In Preparation

1. **Anupam Guha**. The Automated Workplace: Digital Taylorism in India. *Book Chapter in AI in Asia: Ethics, Power and Governance. Digital Futures Lab*, (2022).

Journal Publications

1. Yezhou Yang, **Anupam Guha**, Cornelia Fermüller, and Yiannis Aloimonos. A Cognitive System for Understanding Human Manipulation Actions, *Advances in Cognitive Systems*, (2014).

Conference Publications

1. Satyam Mohla, Sidharth Mohla, **Anupam Guha**, and Biplab Banerjee. Multimodal Noisy Segmentation based fragmented burn scars identification in Amazon Rainforest, *IEEE International Conference on Systems, Man, and Cybernetics (SMC)*, (2020).
2. Mohit Iyyer, Varun Manjunatha, **Anupam Guha**, Yogarshi Vyas, Jordan Boyd-Graber, Hal Daumé III, and Larry Davis. The Amazing Mysteries of the Gutter: Drawing Inferences Between Panels in Comic Book Narratives, *Conference on Computer Vision and Pattern Recognition (CVPR)*, (2017).
3. Mohit Iyyer, **Anupam Guha**, Snigdha Chaturvedi, Jordan Boyd-Graber, and Hal Daumé III. Feuding Families and Former Friends: Unsupervised Learning for Dynamic Fictional Relationships, *North American Association for Computational Linguistics (NAACL)*, (2016). Best Paper Award
4. **Anupam Guha**, Mohit Iyyer, Danny Bouman, and Jordan Boyd-Graber. Removing the Training Wheels: A Coreference Dataset that Entertains Humans and Challenges Computers, *North American Association for Computational Linguistics (NAACL)*, (2015).
5. Yezhou Yang, **Anupam Guha**, Cornelia Fermüller, and Yiannis Aloimonos. Manipulation Action Tree Bank: A Knowledge Resource for Humanoids, *IEEE/RAS International Conference on Humanoid Robots*, (2014).
6. **Anupam Guha**, Yezhou Yang, Cornelia Fermüller, and Yiannis Aloimonos. Minimalist Plans for Interpreting Manipulation Actions, *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, (2013).
7. Hyungsin Kim, **Anupam Guha**, Young Suk Cho, and Ellen Yi-Luen Do. Sketch-Based Screening for Cognitive Impairment Detection: A Human Centered Approach, *ACM Conference on Human Factors in Computing Systems (CHI)*, (2010).

Workshop Publications

1. Satyam Mohla, **Anupam Guha**, and Bishnupriya Bagh. A Material Lens to Investigate the Gendered Impact of the AI Industry, *International Joint Conference on Artificial Intelligence (IJCAI) Workshop on AI for Social Good*, (2021).
2. **Anupam Guha**, Mohit Iyyer, and Jordan Boyd-Graber. "A Distorted Skull Lies in the Bottom Center..." Identifying Paintings from Text Descriptions, *North American Association for Computational Linguistics (NAACL) Human-Computer QA Workshop*, (2016).

Honours, Awards, and Activities

Best Paper Award, NAACL — *June 2016*
Qualcomm Innovation Fellowship, Qualcomm Award: $100,000 (Share: $50,000) — *August 2016 - July 2017*
Dean's Fellowship, University of Maryland Award: $5,000 — *August 2011 - July 2013*
Founder and President of Undergraduate College Quizzing Society *Athenians*

Past Research Experience

Graduate Research Assistant at Computational Linguistics and Information Processing Lab, University of Maryland,
with Dr. Jordan Boyd-Graber *June 2014–August 2014 and January 2015–May 2015*
Working on multimodal coreference resolution (primary research interest) and multimodal representations/embeddings.
Working on coreference driven factoid question answering.

Graduate Research Assistant at Center for Automation Research, University of Maryland,
with Dr. Yiannis Aloimonos *June 2012–August 2012, June 2016–present*
Working on manipulation action understanding with planning and linguistic information.
Working on multimodal coreference resolutions (primary research interest) among images, text and videos.
Working on semantic feedback in deep neural networks.
Working on zero shot learning using word embeddings.
Working on coreference guided word embeddings.

Graduate Research Assistant and Master's Project at Health system's Institute, Georgia Institute of Technology,
with Dr. Ellen Yi-Luen Do *January 2010–July 2010*
Worked on using machine learning to analyse existing psychometric data of patients suffering from mental disorders,
Worked with HCI doctoral students at GaTech and doctors at the Emory University to design new ways to collect, analyse, and predict with psychometric data

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Work Experience

Senior Researcher at Comcast Labs, DC/Philadelphia *September 2017–April 2019*
Worked on improving cross domain embedding models, solving problems with current embedding models, multimodal embeddings
Worked on unsupervised analysis of media chatter data

Research Intern at Comcast Labs, DC supervised by Dr. Ferhan Ture *May 2016–August 2016*
Worked on extracting deep metadata (narrative structure, relationships, events, etc) from movie scripts using deep architectures (RNN, dictionary learning, deep hierarchical topic models)
Worked on unsupervised analysis of dialogue.

Research Engineer in NSI Infinium Global Pvt. Ltd., India. *September 2010–May 2011*
Responsibilities included devising AI and machine learning solutions to assist user personalization from navigation/purchase history, SEO, mining algorithms and assisting miscellaneous development projects

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Teaching Experience and Mentor Roles

Assistant Professor at Centre for Policy Studies, IIT Bombay *September 2019–current*

Graduate Courses Taught as Instructor:
PS 626, AI, Data, and Policy *Spring 2019, Spring 2020, Spring 2021*
Designed and first offered, maximum 60 students

PS 630, Technology and the Future of Workers *Spring 2020, Fall 2021*
Designed and first offered, maximum 20 students

(shared teaching) PS 609, Research Methodology and Design *Fall 2021*
(shared teaching) PS 610 Quantitative and Qualitative Research Methods *Spring 2021*

Faculty Advisor: PhD

1. Abhishek Sharad Mali, CPS PhD 2020 –
2. Avnika, CPS 2021 –
3. Iznallah, CPS 2021 –

Faculty Advisor: Masters

1. Tisha Chakrabarti, CPS MPP 2020-22
2. Nikita Amar Jha, CPS MPP 2020-22
3. Anushree Choudhury, CPS MPP 2020-22

Graduated students

1. Taijshee Mishra, CPS MPP batch of 2019-21, Thesis: Use of Artificial Intelligence in Healthcare in India, EU and US with a focus on its impact on Labour

Other teaching activities in Continuing Education Programmes, summer schools, web courses etc:
Speaker, ACM winter school on Fairness, Accountability, and Transparency in Artificial Intelligence, IIT Kharagpur *January 2020*
Speaker, AI and Ethics, Governance, Policy: Landscape and Roadmap, Summer school at CITAPP IIIT Bengaluru, *December 2019*
Module on AI, ML, and Policy at TIAA ACE, industrial continuing education organised by IIT Bombay, *Fall 2021*

Graduate Teaching Assistant at Department of Computer Science, University of Maryland. Have led recitations in:

Java	*Fall 2012*
Java II	*Spring 2013, Summer 2013, Summer 2014*
C	*Fall 2011, Spring 2016*
Discrete Mathematics	*Spring 2012*
Image Processing	*Fall 2013, Fall 2014*

Co-Mentor of Undergraduate Research Co-Mentored Team Virtual, a team of five undergraduate students at University of Maryland, in their Gemstone Multidisciplinary Research Program, for a duration of four years.
Fellow Mentors: Dr. Yiannis Aloimonos, Gregory Kramida
Undergraduates mentored: Emily Cheung, Chris Lim, Sharise Marshall, Chris Purdy, Christina Winkler
Thesis: Adapting Behavioral Parent Training as an Interactive Computer Game

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Service

Organiser
Chief organiser of annual CPS, IITB seminar"Artificial Intelligence and Policy: Breaking the Technological Ice" conducted in 2020 and 2021.
Organised UMD-Ulster Cognitive Robotics Workshop (UUCRW), 2016 with Yezhou Yang, Cornelia Fermüller, and Yiannis Aloimonos.

Program Committee COLING 2022, COLING 2020, ACL 2018 (Question Answering area), NAACL HLT 2018 (Generation area), Mid-Atlantic Student Colloquium on Speech, Language and Learning (MASC-SLL) 2017

Reviewer EMNLP 2021, N/Core tech RIG Fellowship 2020, ECCV 2020, CVPR 2020, ACL 2020, ACL 2019, CVPR 2019, ACCV 2018, COLING 2018, ECCV 2018, IJAIT 2018, ACL 2018, NAACL HLT 2018, IEEE RA-L 2017, CVPR 2017, ICCV 2017, IEEE RA-L 2016

Volunteer NAACL 2015

Seminars, Invited Talks, and Outreach

Panelist in panel discussion on "Data, Platforms, and AI: A Troubled Legacy", in Policy Dialogues 1, ADCPS, IITB, Mumbai *March 2022*

Panelist in panel discussion on Fairness, Accountability and Transparency, in Academic Research and Careers for Students Symposium (ARCS), ACM, Coimbatore, India *February 2022*

Panelist in seminar, Beyond Ethics: Proposing a Political Economic Framework to Interrogate and Supplement Ethics in AI Policymaking, CEPE/IACAP Joint Conference, Hamburg *July 2021*

Panelist in seminar, Rise of Employee Surveillance post COVID and Labour Rights Violations, IFF, Mumbai *May 2020*

Panelist in A public meeting on NPR, AADHAAR and data protection, PUCL Maharashtra and Article 21 Trust, Mumbai *February 2020*

Speaker in Capacity Augmentation Workshop for the Core Support Group members, SEED Division, DST Expert speaker CTARA, IITB *January 2020*

Talk: An Introduction and Critique of AI Policy in Indian Healthcare. Conducted at Jawaharlal Nehru University, Center for Social Medicine and Community Health. *January 2019*

Talk series: What is to be done? Critique of and Alternatives to the Extractive Imagination of AI . Conducted at a) Center for Policy Studies, Indian Institute of Technology, Bombay, b) National Institute of Public Finance and Policy, c) Jawaharlal Nehru University, Center for the Study of Law and Governance. *January 2019*

Talk series: AI, Society, and Politics of the Future. Conducted at a) Bharati Vidyapeeth's College of Engineering, GGSIPU, b) Indraprastha Institute of Information Technology, Delhi, c) National Institute of Public Finance and Policy, d) Delhi University Political Science, e) Indian Institute of Technology, Delhi, f) Jawaharlal Nehru University, Center for the Study of Law and Governance, g) National Law University, Delhi. *February 2018*

Member, panel discussion at GUEST, GHOST, HOST: MACHINE! Marathon conducted by Serpentine Gallery and Radio Serpentine, London. Panel: In Conversation with Shuddhabrata Sengupta of Raqs Media Collective on the future social, political, and economic implications of AI, on its oppressive and emancipatory potentials for labour. *October 2017*

Did advocacy in the Language Advocacy Day 2017 event organised by JNCL-NCLIS as a member of the UMD delegation to meet Senatorial and Congressional staff. Met staff of House Committee of Science, Space, and Technology and the Senate Commerce, Science, and Transportation Committee. Argued for continued funding in language sciences and AI. *February 2017*

Poster presented at DARPA HRI Meeting in collaboration with Boston Engineering Corporation titled, Usage of Distributed Semantic Representations in Computational Linguistics and Computer Vision, *DARPA HRI.* *November 2016*

Talk on Introductory Artificial Intelligence to undergraduate students at Bharati Vidyapeeth's College of Engineering, Guru Gobind Singh Indraprastha University, India, organised by ACM. *August 2014*

Skills

Languages, systems, and tools: Python (NLTK, numpy, sklearn), MATLAB, Theano, Java, LaTeX, HTML, MySQL, Linux
Relevant graduate courses taken in AI Planning, Machine Learning, Computational Linguistics, Computer Vision, KBAI
Exposure to OCaml, Coq Theorem Prover, LLVM compiler, Scientific Computing

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Natural Languages: Native/bilingual fluency in Bangla, Hindi, and English. Beginner in Mandarin, French, and Japanese.

References are available on request.