

Nikhil Prakash

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Research Interests

I'm interested in understanding the internal mechanisms of deep neural networks to enhance human-AI collaboration and prevent misalignment.

Education

- Sept 2022 – **Ph.D.**, *Northeastern University*, Boston, Massachusetts.
May 2027* Computer Science, Bau Lab (advisor: Prof. David Bau [🔗](#))
GPA: 4/4
- Aug 2016 – **Bachelor of Eng.**, *RV College of Eng.*, Bangalore, India
Aug 2020 Department of Telecommunication
Cumulative GPA: 8.31/10 (First Class with Distinction)



Peer-Reviewed Publications

Conference publications








- ICLR 2024 **Fine-Tuning Enhances Existing Mechanisms: A Case Study on Entity Tracking** [🔗](#)
[Nikhil Prakash](#), Tamar Rott Shaham, Tal Haklay, Yonatan Belinkov, David Bau
International Conference on Learning Representations 2024.
- IUI 2023 **Supporting Requesters in Writing Clear Crowdsourcing Task Descriptions Through Computational Flaw Assessment** [🔗](#)
Zahra Nouri, [Nikhil Prakash](#), Ujwal Gadiraju, Henning Wachsmuth
Intelligent User Interfaces 2023.

Workshop and demonstration publications

- ICML 2023 **Discovering Variable Binding Circuitry with Desiderata** [🔗](#)
Xander Davies*, Max Nadeau*, [Nikhil Prakash*](#), Tamar Rott Shaham, David Bau
Workshop on Challenges in Deployable Generative AI, International Conference on Machine Learning 2023.
- HCOMP 2021 **iClarify – A Tool to Help Requesters Iteratively Improve Task Descriptions in Crowdsourcing** [🔗](#)
Zahra Nouri, [Nikhil Prakash](#), Ujwal Gadiraju, Henning Wachsmuth
Work-in-Progress & Demonstration, Human Computation and Crowdsourcing 2021.

- NeurIPS 2020 **Conceptualization and Framework of Hybrid Intelligence Systems** 
 Nikhil Prakash and Kory W. Mathewson
 Human And Machine in-the-Loop Evaluation and Learning Strategies Workshop,
 Neural Information Processing Systems 2020.
- COMSNETS 2019 **A Grid-based Model for Generating Scale-Free Networks** 
 Amit Kumar Verma and Nikhil Prakash
 Social Networking Workshop, Conference on Communication Systems & Networks 2019.

Work Experience

- June–August 2024 **Practical AI Alignment and Interpretability Research (Pr(Ai)²R) Group**
 Mechanistically investigating *theory of mind* capabilities in language models, mentored by Atticus Geiger .
- June–July 2023 **Stanford Existential Risks Initiative ML Alignment Theory Scholars (SERI-MATS)**
 Investigated superposition in attention heads of GPT2-XL that retrieve factual information from subject token residual stream, mentored by Neel Nanda .
- June 2023 **Alignment Research Engineer Accelerator (ARENA)**
 Participated in this fully-funded upskilling initiative focused on technical AI alignment research.
- Jan–Aug 2022 **Max Planck Institute for Security and Privacy (MPI-SP), Visiting Scholar**
 Worked under the supervision of Prof. Asia J. Biega  to conduct exploratory user studies for investigating well-being of microtask crowdworkers.
- May 2021–Sept 2022 **Delft University of Technology (TU Delft), Research Assistance (Voluntary)**
 Worked under the supervision of Prof. Ujwal Gadiraju  and Prof. Henning Wachsmuth , to develop an assistive tool that would help crowdsourcing requesters in creating clear task descriptions quickly.
- Sept 2020–Jan 2022 **Accolite Software India, Senior Software Engineer**
 Worked as full-stack engineer to design, develop, and maintain complex production-ready web applications. Primary technology stack was Angular, Java, and IBM DB2.
- Jan–May 2020 & June–Aug 2019 **Korea Advanced Institute of Science and Technology (KAIST), Visiting Student Researcher**
 Worked under the supervision of Prof. Juho Kim  to develop an intelligent interactive system for personalizing food recipes based on users' preferences and dietary constraints.
- May–June 2019 **Samsung R&D Institute India - Bangalore, Student Trainee**
 Worked as a student trainee at Samsung Research, Bangalore (SRIB) in the Service PF team to design and develop the offline newsfeed functionality in the Samsung Internet.
- June–July 2018 **Indian Institute of Technology, Ropar (IIT Ropar), Research Intern**
 Worked under the supervision of Prof. Sudarshan Iyengar  to investigate the dynamics of collaboration process on English Wikipedia.

Fellowships and Awards

- 2024 Google Gemma Academic Program GCP Credit Award, worth \$5k.
- 2022 Khoury College of Computer Sciences start-up fund, worth \$5k.
- 2022 Northeastern Graduate Fellowship, worth \$83k (per year).

- 2020 NeurIPS complimentary registration (Travel Award), worth \$100.
- 2020 ACM CoDS-COMAD Student Travel Grant, worth \$80.

Invited Talks

- 2024 Computational Linguistics and Complex Social Networks Group at Indian Institute of Technology Gandhinagar.
- 2024 New England NLP 2024, Brown University.

Voluntary Services

- 2024 Co-organizing Mechanistic Interpretability Social at ICLR 2024.
- 2023 Program committee member of ATTRIB 2023 workshop at NeurIPS.
- 2022 Student volunteer at Ph.D. admissions committee to review prospective Ph.D. student applications.
- 2019 Student volunteer at India HCI.

Engineering Skills

Languages	Python, C++, Java, JavaScript, HTML, CSS, SQL
Technologies & Frameworks	PyTorch, Transformers, Transformer-lens, Scikit-learn, NLTK, Pandas, Numpy, Angular, Bootstrap, jQuery, Docker, Linux