Ankit Aich

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🪪 US Permanent Resident

EDUCATION

Postdoctoral Fellow   Feb 2024 – May 2025
The University of Pennsylvania   Philadelphia, USA
- Research on computational social science and social relations.
- Large Language Modeling and Cultural Analytics.
- World Well Being Project (WWBP) with Lyle Ungar.

Postdoctoral Fellow   Feb 2024 – May 2025
The National Institutes of Health   Baltimore, USA
- Research on patient health interventions using large language models.
- Development for AI-centered treatments on substance use, mental health, human-computer trust.
- Technology and Translational Research Unit with Brenda Curtis.

PhD in Computer Science   Jan 2020 – Jan 2024
University of Illinois   Chicago, USA
- Research in Computational Social Science, NLP in Healthcare & Applied AI.
- **Dissertation** - Towards Unifying Psycholinguistic Healthcare and NLP.
- **Proposal** - The Bridge between Clinical Psycholinguistics and Natural Language Processing.
- **Qualifier** - Understanding the Current State of Mental Health Research in Computer Science.

MS in Computer Science   Jan 2020 – Dec 2022
University of Illinois   Chicago, USA
- **MS Thesis** - The Fortes and Fallacies of Misinformation Detection Systems.

B.Tech in Information Technology   Aug 2014 – May 2018
West Bengal Univ of Technology   Kolkata, India
- **Thesis** - Prediction of Protein Interactions using Machine Learning.

RESEARCH INTERESTS

- Improving user health outcomes with NLP.
- User trust in NLP-LLM systems.
- Style and bias control in LLMs.
- LLMs for mental healthcare.
- Computational social science.
- Human-AI collaborative systems design.

WORK AND RESEARCH EXPERIENCE

Research Scientist   May 2025 – present
Financial Industry Regulatory Authority (FINRA)   Rockville, USA
- Led the development of (model context protocol) MCP enabled LLMs to reduce internal retrieval system latency by 89%.
- Developed LLM-powered benchmarking tools to automate internal entitlements and approvals using REST APIs.
- Developed a Lexicon and Reasoning powered Claude LLM to identify investor risk with a time reduction of 2000x.

Scale AI   Mar 2025 – present
Research Consultant   NYC, USA
- Spearheaded the end-to-end support of (LLM) development for enterprise clients by facilitating data pipelines, model fine-tuning, and multi-stage deployment workflows on AWS (including S3, EC2, and ECS).
- Collaborated cross-functionally with ML engineers and research scientists to deploy fine-tuned transformer-based models using Hugging Face Transformers, PyTorch, and custom inference endpoints optimized for production scalability.
- Engineered innovative agentic pathways and benchmarks to evaluate LLMs as computer use agents (CUAs)

The National Institutes of Health   2024 – May 2025
Fellow   Baltimore, USA
- Leading work on understanding substance and opioid usage, and stigma in AI based support systems.
- Developing work on LLMs and AI in health, recovery, and digital support mechanisms.
- Supervising 4 person teams to develop digital biomarker solutions to understand keystrokes, cellphone usage, and online trends.

Amazon Alexa   May 2023 – Aug 2023
Applied Scientist - II, Intern   Cambridge, USA
- Worked on creating retriever LLMs and Sequence models for API calls.
- Deployed 176B LLMs for cross-lingual and multi-lingual action grounding.

University of Illinois - NLP Lab   Jan 2020 – Jan 2024
Research Assistant   Chicago, USA
- Research in Language variation across neurotypical and neurodivergent populations.
- Research in Misinformation detection, generative modeling, and low resource languages.
- Data Analysis and building SOTA datasets on Mental Healthcare, Fake News.
- Running user studies with controlled settings for computational social science.

Rochester Inst. Of Technology   Aug 2018 – Aug 2019
Research Assistant Intern   Rochester, USA
- Deployed an active learning framework with bayesian optimization on Gaussian Processes to model human hearts from EKG signals.

- Created feature extraction pipelines using PCA and Variational Autoencoders to viz latent spaces of clinical data.
- Created 3D to 1D DeepNets for modeling human irises to aid eye tracking beyond SIFT and SURF.

TEACHING EXPERIENCE

University of Illinois   Jan 2023 – Jun 2023
Instructor   Chicago, USA
- Instructor of CS-421 Natural Language Processing for Spring 2023.
- Course for Masters of Engineering students.
- Rating 4.9/ 5.

University of Illinois   Jan 2020 – Jun 2021
Teaching Assistant   Chicago, USA
- Teaching assistant for CS 342 - Object Oriented UX Design.

University of Illinois   May 2021 – Aug 2021
Graduate Course Builder   Chicago, USA
- Created CS-421 Natural Language Processing for BS/MS/PhD students.
- Designed projects, syllabus, course exams, course checkpoints.

University of Illinois   Jun 2022 – Aug 2022
Graduate Teaching Consultant   Chicago, USA
- Creation, deployment, and innovation of all course materials and training materials to train incoming teaching assistants.
- Workshop creator and leader for grad TA orientation and mentoring.

Unacademy   Feb 2016 – May 2016
Educator Intern   India
- Created and delivered lectures on functional English usage and grammar.
- Course had 11,000 enrollments in 3 months with a 4.75/5 rating.

PEER REVIEWED PUBLICATIONS

Language Models in Digital Psychiatry: Challenges with Simplification of Healthcare Materials
Ankit Aich, Tingting Liu, Salvatore Giorgi, Kelsey Isman, Ruhshana Bobojonova, Lyle Ungar, Brenda Curtis. Nature - NPP—Digital Psychiatry and Neuroscience 3 (1), 1-7 2025

Using LLMs to Aid Annotation and Collection of Clinically-Enriched Data in Bipolar Disorder and Schizophrenia
Ankit Aich, Avery Quynh, Pamela Osseyi, Phil Harvey, Amy Pinkham, Brenda Curtis, Colin Depp, Natalie Parde. In Proceedings of the 10th Workshop on Computational Linguistics and Clinical Psychology (CLPsych 2025) 🔗 held with NAACL 2025

Evaluating Natural Language Processing Derived Linguistic Features Associated with Current Suicidal Ideation, Past Attempts, and Future Suicidal Behavior
Lauren McBride, Varsha Badal, Phil Harvey, Amy Pinkham, **Ankit Aich**, Natalie Parde, Colin Depp. In Journal of psychiatric research

The Illusion of Empathy: How AI Chatbots Shape Conversation Perception
Tingting Liu, Salvatore Giorgi, **Ankit Aich**, Allison Lahnala, Brenda Curtis, Lyle Ungar, and Joao Sedoc. In Proceedings of the Thirty-Ninth Conference of the Association of Advancement of Artificial Intelligence (AAAI-2025). Philadelphia, PA - 2025.

Explicit and Implicit Large Language Model Personas Generate Opinions but Fail to Replicate Deeper Perceptions and Biases
Sal Giorgi, Tingting Liu, **Ankit Aich**, Kelsey Isman, Garrick Sherman, Zachary Fried, Joao Sedoc, Lyle Ungar, Brenda Curtis. in Findings of the EMNLP 2024.

Towards Comprehensive Language Analysis for Clinically Enriched Spontaneous Dialogue
Baris Karacan, **Ankit Aich**, Avery Quynh, Amy Pinkham, Philip Harvey, Colin Depp, and Natalie Parde. In Proceedings of the 2024 Joint International Conference on Computational Linguistics, Language Resources and Evaluation (LREC-COLING 2024). Turin, Italy, May 20-25, 2024.

Towards Intelligent Clinically-Informed Language Analyses of People with Bipolar Disorder and Schizophrenia
Ankit Aich, Avery Qunyh, Varsha Badal, Amy Pinkham, Philip Harvey, Colin Depp, Natalie Parde. Findings of the 2022 Conference on Empirical Methods in Natural Language Processing (EMNLP 2022) in Abu Dhabi, UAE. December 7-11 2022.

Demystifying Neural Fake News via Linguistic Feature-Based Interpretation
Ankit Aich, Souvik Bhattacharya, and Natalie Parde. In Proceedings of the 29th International Conference on Computational Linguistics (COLING 2022). Gyeongju, Republic of Korea, October 12-17, 2022.

Are You Really Okay? A Transfer Learning-based Approach for Identification of Underlying Mental Illnesses
Ankit Aich and Natalie Parde. In the Proceedings of the 2022 Workshop on Computational Linguistics and Clinical Psychology (CLPsych 2022) in conjunction with the North American Chapter of the Association for Computational Linguistics (NAACL). Seattle, Washington, July 15, 2022.

Telling A Lie: Analyzing the Language of Information and Misinformation during Global Health Events
Ankit Aich and Natalie Parde. In the Proceedings of the 2022 Language Resources and Evaluation Conference (LREC 2022). Marseille, France, June 20-25, 2022.

TweetTaglish: A Dataset for Investigating Tagalog-English Code-Switching
Megan Herrera, **Ankit Aich,** and Natalie Parde. In the Proceedings of the 2022 Language Resources and Evaluation Conference (LREC 2022). Marseille, France, June 20-25, 2022.

A Scaled Conjugate Gradient Back-propagation Algorithm for Keyword Extraction
Ankit Aich, Amit Dutta, and Aruna Chakraborty. A Scaled Conjugate Gradient Backpropagation Algorithm for Keyword Extraction. In: Bhateja, V., Nguyen, B., Nguyen, N., Satapathy, S., Le, DN. (eds) Information Systems Design and Intelligent Applications. Advances in Intelligent Systems and Computing, vol 672. Springer, Singapore. https://doi.org/10.1007/978-981-10-7512-4_67.

A Crawler-Parser based Approach to Newspaper Scraping and Reverse Searching of Articles
Ankit Aich, Amit Dutta, and Aruna Chakraborty. A Crawler–Parser-Based Approach to Newspaper Scraping and Reverse Searching of Desired Articles. In: Satapathy, S., Tavares, J., Bhateja, V., Mohanty, J. (eds) Information and Decision Sciences. Advances in Intelligent Systems and Computing, vol 701. Springer, Singapore. https://doi.org/10.1007/978-981-10-7563-6_15.

OTHER PUBLICATIONS (PEER REVIEWED ABSTRACTS - POSTERS - NON-PR ARTICLES)

The State of Modern LLMs for Substance Use Help - Extended Abstract
Ankit Aich, Salvatore Giorgi, Kelsey Jane Isman, Tingting Liu, Zachary Fried, João Sedoc, Brenda Curtis. The International Conference on Computational Social Science, Philadelphia, PA 2024.

The Illusion of Empathy: How AI Chatbots Shape Conversation Perception - Extended Abstract
Tingting Liu, Salvatore Giorgi, **Ankit Aich**, Allison Lahnala, Brenda Curtis, Lyle Ungar, Joao Sedoc. In Proceedings of The Second Workshop on Social Influence in Conversations (SICON 2024). with EMNLP 2024.

RESEARCH GRANTS WON

Graduate Student Council Travel Award   2022
University of Illinois Chicago
  - Awarded travel research grant.

Research Grant - Social Cognition and Suicide in Psychotic Disorders   2021
National Institute of Mental Health
  - Grant of USD 160,142.
  - Awarded for research on building the first multi-modal mental health clinical dataset.
  - Principal site RA with Natalie Parde (site PI), Colin Depp, Amy Pinkham, and Philip Harvey.
  - With UCSD, UMiami, UTDallas, and UIC.

Undergraduate Research Grant   2018
West Bengal Univ of Technology
  - Research Grant of INR 10000 for outstanding research in UX and UI.

Undergraduate Research Grant   2017
West Bengal Univ of Technology
  - Research Grant of INR 10000 for outstanding research in applied machine learning.

AWARDS NOMINATED

Laurette Kirsteinn Award For International Grad Students   2022
  - Department nominated for award towards international graduate student   Chicago, USA
    research and funding.

Provost's Award for Graduate Research   2021
  - Nominated award for exceptional research at the doctoral level.   Chicago, USA

INVITED TALKS

Walking towards Clinically Grounded Real NLP Systems   2022
Reveal Brainspace, Chicago

What's my Homework? Best Practices to develop and maintain for being an effective TA 2022
Graduate College, UIC

How to be an Effective Graduate Teaching Assistant 2021
Graduate College UIC

How to Choose a Research Area in your PhD 2021
UIC PhD Graduate College

ACADEMIC SERVICE

Association for Computational Linguistics 2021 – present
Reviewer, Track Committee Member
  - ARR 2024
  - IC2S2 2024
  - EACL 2021
  - EMNLP 2021, 2022, 2023
  - ACL 2023
  - Tracks served
    - Reality Check
    - Computational Social Science & Cultural Analytics
    - NLP Applications
    - Ethics in NLP
    - Natural Language Generation
    - Healthcare in AI & COVID 19

Association for Computational Linguistics 2020 – 2024
Volunteer
  - Lead volunteer for EMNLP 2022
  - Volunteer for ACL 2020, ACL 2021, NAACL 2021, NAACL 2022
  - Technical support, on-site presentation support, helpdesk support

National Institutes of Health 2024 – present
  - Judge for Research Poster Day

Computational Intelligence 2023 – 2024
Reviewer
  - Reviewer for Computational Intelligence
  - Areas of Computational Social Science, NLP

Graduate Student Council 2021 – 2022
Primary Departmental Representative for CS
  - The primary representative for CS graduate school at UIC
  - Responsible for departmental student issues, departmental events, and student awards.
  - Voicing student concerns at the university administrative level.

American Federation of Teachers   2023 – 2024
Member Organizer
  - Member organizer for UIC and AFT local 6297

ACADEMIC ADVISING

Research Advisor   2021 – present
  - Ruhshana Bobojonova, Postbac Fellow @ NIDA
  - Ruth J. Heo, Summer Intern @ NIDA
  - Zachary Fried, Postbac Fellow @NIDA
  - Katherine Guerrerio, Summer Intern @ NIDA
  - Samiatu Yussuf, Summer Intern @ NIDA
  - Pamela Osseyi, Postbac Fellow @NIDA
  - Dahlia Earleywine, Postbac Fellow @NIDA
  - Kelsey Isman, Postbac Fellow @NIDA
  - Megan Herrera - Data Scientist @ Discover - previously BS @ UIC
  - Souvik Bhattacharya - PhD student @ UIC - previously MS student @ UIC
  - Nimeesa Chan - Current Ph.D. student @ Johns Hopkins - previously BS @ UIC
  - Nandini Jirobe - Current BS student at UIC
  - Daniyal Siddiqui - Current BS student at UIC

PROFESSIONAL CERTIFICATIONS

Data Analysis and Visualzation in R ｜ Ethical Hacking in Linux Frameworks

LANGUAGES

English	● ● ● ● ●	Bengali	● ● ● ● ●
Hindi	● ● ● ● ●	Spanish	● ● ● ○ ○
German	● ○ ○ ○ ○		

REFERENCES

Natalie Parde, *Associate Professor of Computer Science,* University of Illinois Chicago, PhD Advisor
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Colin A Depp, *Professor of Psychiatry,* University of California, San Diego
cdepp@health.ucsd.edu

Lyle Ungar, *Professor,* University of Pennsylvania
ungar@cis.upenn.edu

Barbara Di Eugenio, *Professor of Computer Science,* University of Illinois, Chicago
bdieugen@uic.edu

DECLARATION

Ankit Aich
USA, 10/2024