

Indira Sen

COMPUTER SCIENCE P.H.D CANDIDATE INTERESTED IN THE APPLICATION OF NLP METHODS IN COMPUTATIONAL SOCIAL SCIENCE

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Research Interests

I'm interested in improving the measurement of political and prejudicial attitudes and behaviours from digital trace data using mixed-methods and natural language processing. My research aims to illuminate and characterize the potentials, pitfalls, and consequences of understanding such attitudes from unobtrusive digital traces.

Education

GESIS - Leibnitz Institute for Social Sciences

P.H.D IN COMPUTER SCIENCE

ADVISOR: PROF. CLAUDIA WAGNER

Cologne, Germany

2018 - Present

Indraprastha Institute of Information Technology (IIIT-D)

M.S IN COMPUTER SCIENCE

ADVISOR: PROF. PONNURANGAM KUMARAGURU (PK)

GPA: 8.67/10

New Delhi, India

2015 - 2017

Vellore Institute of Technology (VIT)

B.S IN COMPUTER SCIENCE

GPA: 9.1/10

Vellore, India

2010 - 2014

Honors & Awards

2021	Summer Intern Award for Outstanding Innovation , Nokia Bell Labs	Cambridge, UK / virtual
2021	Best Reviewer Award , ICWSM	virtual
2020	Travel Grant for attending EMNLP ,	virtual
2020	Selected for SAGE Text-Mining Fellowship , SAGE, Ocean	London, UK (virtual)
2020	Selected as Facilitator for the Alan Turing Institute Data Study Group , 2 week hackathon where we worked with an Industry partner (CatsAI) to deploy explainable AI predictions	virtual
2020	Accepted to MLSS 2020 , One of the 160 participants out 1100 application accepted to participate in the highly competitive machine learning summer school	virtual
2020	Travel Grant , For attending FAT* 2020	Barcelona, Spain
2019	Travel Grant , For attending Summer Institute in Computational Social Science (SICCS), Germany	Bamberg, Germany
2017	TA Excellence Award , Foundations of Computer Security	IIIT-Delhi, India
2017	Accepted to Summer@EPFL , One of 60 interns selected out of 2000 applications	EPFL, Switzerland
2015-2016	Dean's Merit List , For Academic Performance	IIIT-Delhi, India
2015	GATE Scholarship , Scholarship for Master's Studies	
2011-2014	Merit Scholarship , For Outstanding Academic Achievement	VIT, Vellore

Publications

Journal Articles

A Total Error Framework for Digital Traces of Human Behavior on Online Platforms

INDIRA SEN, FABIAN FLOECK, KATRIN WELLER, BERND WEISS, AND CLAUDIA WAGNER. PUBLIC OPINION QUARTERLY

2021

Conference Articles

How Does Counterfactually Augmented Data Impact Models for Social Computing Constructs?

2021

INDIRA SEN, MATTIA SAMORY, FABIAN FLOECK, CLAUDIA WAGNER AND ISABELLE AUGENSTEIN.
CONFERENCE ON EMPIRICAL METHODS ON NATURAL LANGUAGE PROCESSING (EMNLP)

“Call me sexist, but...” : Revisiting Sexism Detection Using Psychological Scales and Adversarial Samples

2021

MATTIA SAMORY, INDIRA SEN, JULIAN KOHNE, FABIAN FLOECK, AND CLAUDIA WAGNER.
ACCEPTED AT INTERNATIONAL CONFERENCE ON WEB AND SOCIAL MEDIA (ICWSM) 2021

On the Reliability and Validity of Detecting Approval of Political Actors in Tweets

2020

INDIRA SEN, FABIAN FLOECK, AND CLAUDIA WAGNER.
CONFERENCE ON EMPIRICAL METHODS ON NATURAL LANGUAGE PROCESSING (EMNLP)

Empowering First Responders through Automated Multimodal Content Moderation

2018

DIVAM GUPTA, INDIRA SEN, NIHARIKA SACHDEVA, PONNURANGAM KUMARAGURU, ARUN BALAJI BUDURU.
IEEE INTERNATIONAL CONFERENCE ON COGNITIVE COMPUTING

Best Paper Award

Worth its Weight in Likes: Towards Detecting Fake Likes on Instagram

2018

INDIRA SEN, ANUPAMA AGGARWAL, SHIVEN MIAN, SIDDHARTH SINGH, PONNURANGAM KUMARAGURU, ANWITAMAN DATTA.
WEBSCI 2018, SHORT PAPER

Workshop Articles

What Human Rationales Tell us about Machine Explanations

2021

INDIRA SEN, MATTIA SAMORY, FABIAN FLOECK, CLAUDIA WAGNER
HCI+NLP WORKSHOP, IN CONJUNCTION WITH EACL

Measuring Public Opinion Online: Potentials and Pitfalls

2020

INDIRA SEN, FABIAN FLOECK, CLAUDIA WAGNER
WOMEN IN MACHINE LEARNING (WiML), IN CONJUNCTION WITH NEURIPS

Poster

A Twitter Corpus for Hindi-English Code Mixed POS Tagging

2018

KUSHAGRA SINGH, INDIRA SEN, PONNURANGAM KUMARAGURU.
WORKSHOP ON NATURAL LANGUAGE PROCESSING FOR SOCIAL MEDIA (SOCIALNLP), IN CONJUNCTION WITH ACL

Data Paper

Language Identification and Named Entity Recognition in Hinglish Code Mixed Tweets

2018

KUSHAGRA SINGH, INDIRA SEN, PONNURANGAM KUMARAGURU. ACL STUDENT RESEARCH WORKSHOP

Experience

Nokia Bell Labs

Cambridge, UK (virtual)

INTERN AT SOCIAL DYNAMICS GROUP. ADVISORS: DR. DANIELE QUERCIA

Jun 2021 - Aug 2021

- Understanding and Characterizing the sustainability efforts of companies from employee reviews.
- Developed a mixed-method techniques for detecting employees' views on their employer's sustainability efforts using a deep-learning framework (sBERT)
- Results from the internship are currently in preparation for publication.

SAGE Ocean

London, UK (virtual)

SAGE OCEAN FELLOW. ADVISORS: DR. DANIELA DUCA

Oct 2020 - Dec 2020

- Contributing to a Text cleaning WebApp called Texti
- Working on NLP transformations in Python and documentation
- Results from the Fellowship are described here.

Computational Social Science Department, GESIS

Cologne, Germany

DOCTORAL RESEARCHER. ADVISORS: PROF. CLAUDIA WAGNER, DR. KATRIN WELLER

Oct 2018 - Present

- Identifying, Characterizing and Quantifying errors that occur when measuring attitudes from Digital Traces
- Building robust and interpretable NLP methods for measuring social science phenomena
- Large scale Twitter data collection using Amazon Web Services (AWS) as a service for Social Scientists.

Precog Research Lab, IIIT Delhi

New Delhi, India

RESEARCH ASSOCIATE. ADVISORS: PROF. PONNURANGAM KUMARAGURU AND PROF. ARUN BALAJI BUDURU

Dec 2017 - Aug 2018

- Landscaping the fake like marketplace on Instagram and characterizing fake likers, and their attack vectors.
- Detecting Multimodal Hatespeech on Social Media

CHILI Lab, École polytechnique fédérale de Lausanne

SUMMER INTERN, ADVISOR: PROF. PIERRE DILLENBOURG

- Worked on inferring dependencies between EPFL courses based on Concept Mining and grading patterns

Lausanne, Switzerland

Jun 2017– Aug 2017

Nanyang Technological University

RESEARCH ASSISTANT, ADVISOR: PROF. ANWITAMAN DUTTA

- Master's Thesis: Worked on detecting fake engagement on Instagram.

Singapore

Jan 2017– May 2017

Presentations and Talks

A Total Error Framework for Digital Traces of Humans

DGS KONGRESS

Virtual

Sep 2020

(Mis)Measuring Attitudes from Digital Traces

THIRD ANNUAL POLITICS AND COMPUTATIONAL SOCIAL SCIENCES CONFERENCE (PACSS)

Virtual

Aug 2020

Measuring Opinions towards Politicians in Tweets

NEWS AND PUBLIC OPINION (NeCo)

Virtual

June 2020

Teaching, Mentorship, and Academic Service

Translation Tutorial on the Total Error Paradigm for Social Inferences

FAT* 2020

- Tutorial on diagnosing errors and biases in observational studies from digital traces

Barcelona, Spain

Jan 2020

Introduction to Python and Data Science with Python

UNIVERSITY OF COLOGNE

- Interactive, hands-on five-day lecture series for teaching introductory python concepts to social science doctoral candidates

Cologne, Germany

Oct, 2019

Mentorship

IIIT DELHI

- Vani Agarwal. Master's Thesis. Improving Content Moderation through Co-Training
- Kushagra Singh. Bachelor's Thesis. Information Extraction Tools for Code-Mixed Hindi-English Social Media Content

New Delhi, India

Reviewer

CSCW (2019, 2020), THEWEBCONF (2020, 2021), ICWSM (2019, 2020, 2021, 2022), EMNLP (2020)

Skills

Programming: Python, R, Java, C++, C, MongoDB, SQL, Bash, Javascript,

Libraries/Tools: scikit-learn, pytorch, tensorflow, keras, pandas, NLTK, NetworkX, AWS, Amazon Mechanical Turk