

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 am broadly interested in Computational Social Science, applying methods from machine learning, natural language processing and measurement theory to improve social science inferences from digital traces like social media.

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

Publications

Journal Articles

A Total Error Framework for Digital Traces of Humans

INDIRA SEN, FABIAN FLOECK, KATRIN WELLER, BERND WEISS, AND CLAUDIA WAGNER. ARXIV PREPRINT, ARXIV:1907.0822
ACCEPTED TO PUBLIC OPINION QUARTERLY

2019

Conference Articles

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

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

2020

“Unsex me here” : Revisiting Sexism Detection Using Psychological Scales and Adversarial Samples

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

2020

Empowering First Responders through Automated Multimodal Content Moderation

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

2018

Best Paper Award

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

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

2018

Workshop Articles

What Human Rationales Tell us about Machine Explanations

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

2021

Measuring Public Opinion Online: Potentials and Pitfalls

INDIRA SEN, FABIAN FLOECK, CLAUDIA WAGNER

WOMEN IN MACHINE LEARNING (WiML), IN CONJUNCTION WITH NEURIPS

2020

Poster

A Twitter Corpus for Hindi-English Code Mixed POS Tagging

KUSHAGRA SINGH, INDIRA SEN, PONNURANGAM KUMARAGURU.

WORKSHOP ON NATURAL LANGUAGE PROCESSING FOR SOCIAL MEDIA (SOCIALNLP), IN CONJUNCTION WITH ACL

2018

Data Paper

Language Identification and Named Entity Recognition in Hinglish Code Mixed Tweets

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

2018

Experience

SAGE Ocean

SAGE OCEAN FELLOW. ADVISORS: DR. DANIELA DUCA

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

London, UK (virtual)

Oct 2020 - Dec 2020

Computational Social Science Department, GESIS

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

- 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.

Cologne, Germany

Oct 2018 - Present

Precog Research Lab, IIIT Delhi

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

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

New Delhi, India

Dec 2017 - Aug 2018

CHILI Lab, École polytechnique fédérale de Lausanne

SUMMER INTERN, ADVISOR: PROF. PIERRE DILLENBOURG

- One of the 50 selected out of 2000+ applicants worldwide, via Summer@EPFL.
- 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

Extra-Curriculars, Honors & Awards

2020	Received Travel Grant for 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	Invited to participate in Google EMEA's Get Ahead Program, Get Ahead is an eight week virtual training program for female identifying students interested in developing their technical skills for future employment opportunities at Google.	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 2017, One of 60 interns selected out of 2000 applications	EPFL, Switzerland
2015-2016	Dean's Merit List, For Academic Performance	IIIT-Delhi, India
2011-2014	Merit Scholarship, For Outstanding Academic Achievement	VIT, Vellore

Presentations and Talks

A Total Error Framework for Digital Traces of Humans

DGS KONGRESS

Virtual

Sep 2020

(Mis)Measuring Attitudes from Digital Traces

PACSS

Virtual

Aug 2020

Measuring Opinions towards Politicians in Tweets

NECo

Virtual

June 2020

Teaching, Mentorship and Academic Service

Translation Tutorial on the Total Error Paradigm for Social Inferences

FAT* 2020

Barcelona, Spain

Jan 2020

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

Introduction to Python and Data Science with Python

UNIVERSITY OF COLOGNE

Cologne, Germany

Oct, 2019

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

Mentorship

IIIT DELHI

New Delhi, India

- 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

Reviewer

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