

# Avijit Ghosh

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Social Networks Algorithm Auditing Natural Language Processing Human Computer Interaction Usable Privacy

## Education

### Northeastern University

Ph.D. student in Computer Science

### Indian Institute of Technology (IIT) Kharagpur

B.Tech. in Chemical Engineering, M.Tech in Financial Engineering, Minor in Computer Science

Boston, MA

2019 - Present

Kharagpur, India

2014 - 2019

## Experience

### Northeastern University

Research Assistant at Khoury College of Computer Sciences | Advisor: Alan Mislove

Boston, MA

Sep 2019 - Present

- Investigated the ad reach and spend information obtained from Facebook's ad transparency feature and the personal targeting dataset from Propublica's Facebook ad dataset, aided with controlled ad placement experiments.
- Demonstrated that advertisers with higher budgets use more privacy sensitive targeting techniques like PII or Lookalike audience than low budget advertisers. Findings published and presented at [IEEE ConPro 2019](#).

### LIG, University of Grenoble Alps

Visiting Researcher | Advisor: Oana Goga

Grenoble, France

May 2019 - July 2019

- Study of how news companies promote different items on social media, investigating possible patterns of differential information spreading using both posts and ads. Preparing a manuscript to be submitted at [WWW'20](#).
- During the course of the project, we discovered and reported an exposed access token bug to [Facebook Bug Bounty](#).

### Xerox Research Centre

Research Intern

Bangalore, India

May 2017 - July 2017

- Implemented XTrack, a Smart Vehicle Tracking and Battery usage minimizing Algorithm, using BLE to distribute GPS information.
- Proposed a method for Uber-like Surge Price Prediction using Spatio-Temporal techniques like the Neural Hawkes and Recurrent Marked Temporal Point Process. Awarded the title of [Best Internship Project](#).

### Google Summer of Code

GSoc Student at OpenMRS

Remote

Apr 2016 - Aug 2016

- OpenMRS is an Opensource Medical Record System geared towards developing countries. I replaced the HTML XForms system used in the OpenMRS android client with native generated forms using the Forms REST Api and added offline form saving.
- Configured Travis CI to automatically build and push the apk to play store. Overall, contributed [100K lines of code](#).

### IIT Kharagpur

Undergraduate Researcher | Advisors: Niloy Ganguly, Saptarshi Ghosh

Kharagpur, India

2014 - 2019

- Vector space representation of organic molecules to predict aqueous solubility (accurate upto 0.685  $R^2$ ) using machine learning techniques.
- Automated Extraction of Catchwords from Legal Documents using a novel NER based tagger to help categorize lengthy legal texts.
- Automatically position user comments against relevant news article paragraphs. Presented at [ECIR 2019](#).
- Data Driven Disaster Response Systems using Social Media (at the CNERG Lab):
  - Project: Savitr - A realtime location extraction system for disaster management using twitter. Presented at [WWW-SMERP 2018](#).
  - Project: Classification and Summarization of tweets during a disaster event, presented at [IBM Day 2016](#).

## Publications

### Analyzing Political Advertisers' Use of Facebook's Targeting Features

Avijit Ghosh, Giridhari Venkatadri, Alan Mislove

Conpro '19

San Francisco, California

### Public Sphere 2.0: Targeted Commenting in Online News Media

Ankan Mullick, Sayan Ghosh\*, Ritam Dutt\*, Avijit Ghosh\*, Abhijnan Chakrabarty \*equal contribution

ECIR '19

Cologne, Germany

### SAVITR: A System for Real-time Location Extraction from Microblogs during Emergencies

Ritam Dutt, Kaustubh Hiware, Avijit Ghosh, Rameshwar Bhaskaran

WWW-SMERP '18

Lyon, France

### Molecule2Vec: Vector Space Representation of Organic Molecules for prediction of properties using

### Deep Neural networks [oral abstract]

Avijit Ghosh, Debasis Sarkar

EUCHEMS '18

Liverpool, UK

### WebSelect: A Research Prototype for Optimizing Ad Exposures based on Network Structure

Avijit Ghosh, Agam Gupta, Divya Sharma, Uttam Sarkar

WITS '16

Dublin, Ireland

## Awards & Grants

- 2019 **Winner**, Best Poster Award
- 2019 **Winner**, Institute Order of Merit - Technology
- 2018 **Winner**, SGSIS Institute Challenge Grant - Worth INR 1 Million

ECIR'19

IIT Kharagpur

IIT Kharagpur

## Skills

**Languages** Python, Java, C, R, Bash, SQL, HTML/CSS, JavaScript, Matlab  
**Frameworks** Git, Travis, Keras, TensorFlow, Docker, Android