Curriculum Vitae

AGRIMA SETH

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EDUCATION

University of Michigan, School of Information **Aug 2019-Present**
Ph.D. student, School of Information Advisors: Eytan Adar, Ceren Budak
University of Pennsylvania, School of Engineering and Applied Science, Philadelphia, PA **May 2018**
Master of Science in Engineering, Major: Computer & Information Science GPA: 3.81, Advisor: Lyle Ungar
University of Pune, India **May 2016**
Bachelor of Engineering, Information Technology GPA: 79/100

PUBLICATIONS

- **Seth A**., Nayak S., Mothe J. and Jadhay S. (2017). News Dissemination on Twitter and Conventional News Channels In Proceedings of the 19th International Conference on Enterprise Information Systems - Volume 1: ICEIS, ISBN 978-989-758-247-9, pages 43-52. DOI: 10.5220/0006264100430052.
- **Seth, A.,** & Mishra, D. (2014). Comparative Study of Geometric and Image Based Modelling and Rendering Techniques. arXiv preprint arXiv:1409.5024.
- Pol, A. A., Cerminara, G., Germain, C., Pierini, M., & **Seth, A.** (2019). Detector monitoring with artificial neural networks at the CMS experiment at the CERN Large Hadron Collider. Computing and Software for Big Science, 3(1), 1-13.
- **Technical reviewer** of the book titled "BeagleBone Black Cookbook" (ISBN 13 9781783982929).

WORK EXPERIENCE

Machine Learning Engineer, Morgan Stanley **New York, NY (Aug 2018 –July 2019)**

- Developed an automatic signature verification system to detect forgeries.
- Implemented CNNs, YOLO, Siamese network for signature recognition and verification.

RESEARCH EXPERIENCE

Ph.D. student, Cross-lingual modeling of Controversy and Conflict **Ann Arbor, MI (Mar 2021-ongoing)**
University of Michigan

- Analyzed **Wikipedia dump** across 10 languages to ascertain the differences in representation and coverage of controversies in these languages.
- Performed a small scale **qualitative study** to identify the differences in **argumentation behavior** across the 10 languages.

Ph.D. student, Optimized data collection on Microblogs **Ann Arbor, MI (Jan 2020- Mar 2021)**
University of Michigan

- Evaluated methods for topic-relevant **data identification**, **query generation**, and **query selection** for collection of high-precision and high-recall data from microblogs.
- Designed a framework to benchmark the performance of algorithms across **two social movements**: BlackLivesMatter and Metoo. *Paper in progress*

Ph.D. student, Inter-group conflict on social networking sites **Ann Arbor, MI (Aug 2019-Dec 2019)**
University of Michigan

- Analyzed 4 years of Reddit data to study **intergroup conflicts** on social networking sites.
- Created computational models to study **language norms** of different communities.
- Attempted to create computational models to detect the hijacking of conversations of a group by outgroup members.

Master's Thesis **Philadelphia, PA (Jan 2017 – May 2018)**
University of Pennsylvania

- Performed a study on **"Studying Depression Using Linguistic Features from Multiple Social Media Sources"** to harness the potential of self-declared data on social media (specially Twitter) and neuroticism data **(N7)** from a generalized personality test **(MyPersonality Test)** to build a model from these large-scale weakly labelled data sources to predict depression scores and compared them to the clinically validated screening tool: Centre for Epidemiological Studies Depression Scale **(CES-D).**
- Extracted features like **LIWC, User2Vec and Topics** to identify the lexica of a depressed individual. Analyzed the predictive power of different combinations of these features and sources.
- Identified the most robust features and analyzed the performance of predictive models using **ROC-AUC**.

Machine Learning Intern, **Geneva, Switzerland (June 2017 – Aug 2017)**
European Organization for Nuclear Research (CERN)

- Collaborated with Compact Muon Solenoid (CMS) EP-CMG team at CERN & implemented normalization techniques in **Python** to study data patterns in drift tubes.
- Developed machine learning test model (autoencoder) using **Keras & Tensorflow** to automate current paradigm of quality assessment by detector experts facilitating checking of large volumes of data in real-time; improving ability to detect unexpected anomalies.
- Served on core machine learning research team, experimented with different machine learning models and feature selection techniques. **Awarded 2nd prize** among 37 intern projects during Openlab Lightning talk at CERN. **Published** in Computing and Software for Big Science, Springer Publications, 2018.

Research Intern, Institut de Recherche en Informatique de Toulouse **Toulouse, France (Dec 2015 – Feb 2016)**

- Compared the flow of catastrophic topics on Twitter and news channels using **Python programming**, performed visualization on **Tableau**.
- Published paper at **ICEIS 2017 (Portugal)**. **Awarded 1st position** in Amalgam, at AIT Pune, 2016.

PROJECTS AND COMPETITIONS

- Worked with **PathCheck Foundation(non-profit)** to integrate verified information from Twitter with **Karuna App** and evaluated and integrated summarizers (BART, T5) with the information checking dashboard (June 2021 - Aug 2021)
- Created a **text summarization and analytics platform** that works on top of messaging systems being used at CERN, Switzerland. Programmed **natural language processing and machine learning routines** for answering users' queries (summary and important chats). Link: https://github.com/parityapp/ (July 2017).
- **Classified text data in various levels of difficulty** using labeled excerpts to train models using **Python, Scikit-learn**. Engineered syntactic and semantic features for model training and compared Spearman Correlation of these models on held-out dataset (Mar 2017 - Apr 2017).
- Employed **dlib** for **face detection** and land marking the images in each test video frame and replacement image for **automated face replacement**. Self-coded Delaunay triangulation based on land marking. Employed **OpenCV** for warping and applied Poisson blending (Dec. 2016).
- Implemented **Image Morphing** using **Triangulation** and **Thin Plate Spline** method (Oct 2016).
- Performed **Panorama creation** using **RANSAC** to get a consistent homography (Oct 2016).

TEACHING

- Information Analysis Capstone I — Fall 2021
  Undergraduate Course, UMSI — Graduate Student Instructor
- Network Analysis — Spring 2021
  Graduate Course, UMSI — Graduate Student Instructor
- Information Analysis Project — Winter 2021
  Undergraduate Course, UMSI — Graduate Student Instructor
- Models of Social Information Processing — Fall 2020
  Undergraduate Course, UMSI — Graduate Student Instructor

VOLUNTEERING, MENTORING AND SOCIETY MEMBERSHIPS

- Managed and led 3 NLP based projects at Pathcheck Foundation. June 2021-Aug 2021

- Led Makerspace workshops and was member of 'Girls Who Code' at Morgan Stanley. Nov 2018 - July 2019
- Mentored a student during the Learn,IT Girl ! program to design and code a Korean Music recommendation System. Oct 2017-Jan 2018
- Co-founder of Big Data Club at Army Institute of Technology, Pune India in 2015
- Member of IEEE student chapter (2015-2016 AIT Pune), Computer Science Society of India (2014-2016) and Robotics Society of India (2013-2016).

TECHNICAL PROFICIENCIES

Languages: C, Python, C++, Java, LISP, JavaScript, Java Servlets, PHP, node.js, Matlab, R.
Operating Systems: Windows, Unix, Linux.
Libraries and Packages: NLTK, scikit-learn, Numpy, Scipy, Pandas, Opengl, OpenCV, XML, JSON, Protobuf, Keras, Tensorflow.
Databases & Tools: Git, NoSQL, MySQL, Cassandra, DynamoDb, Weka, 3d Max Studio, Blender, Vizard 3D, V-ray Renderer, Tableau.
Knowledge of natural language processing, machine learning, feature engineering, data mining, data analysis and data visualization.

HONORS AND AWARDS

- Ranked 2nd among 4789 students of Information Technology in all colleges of University of Pune.
- Selected for MIT Media Lab 5thDesign Innovation Workshop (200 students selected out of 1500 applicants).
- Awarded Tata Merit Scholarship and Academic Merit Scholarships for standing 1st in Information Technology Dept. 2012-2016.
- Gold Medal in Academics at Army Institute of Technology, Pune Information Technology Class of 2016
- Awarded Grace Hopper Student Scholarship 2015