

# PARTH PATWA

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## EDUCATION

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**University of California Los Angeles (UCLA)**

*September 2021 - June 2023*

MS in Electrical and Computer Engineering (ECE)

**Indian Institute of Information Technology Sri City (IIITS)**

*August 2017 - May 2021*

B.Tech honors in Computer Science and Engineering (CSE), minor in AI/ML

Cumulative GPA: 9.12/10

## PUBLICATIONS, UNDER REVIEW PAPERS AND PRE-PRINTS

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- [Can self reported symptoms predict daily COVID-19 cases?](#). **Patwa P**, Reddy V, Sukumaran R, Sethuraman TV, Nashnoush E, Shankar S, Kaur R, Singh A, Raskar R. Workshop on AI for social Good at IJCAI 2021
- [COVID-19 Outbreak Prediction and Analysis using Self Reported Symptoms](#). Rohan Sukumaran, **Parth Patwa**, Sethuraman TV, Sheshank Shankar, Rishank Kanaparti, Joseph Bae, Yash Mathur, Abhishek Singh, Ayush Chopra, Myungsun Kang, Priya Ramaswamy, Ramesh Raskar. *Journal of Behavioral Data Science* 2021
- [Bitions@DravidianLangTech-EACL2021: Ensemble of Multilingual Language Models with Pseudo Labeling for offence Detection in Dravidian Languages](#). Debapriya Tula, Prathyush Potluri, Shreyas MS, Sumanth Doddapaneni, Pranjal Sahu, Rohan Sukumaran, **Parth Patwa**. *Proceedings of the 1st Workshop on Speech and Language Technologies for Dravidian Languages EACL* 2021
- [Overview of CONSTRAINT 2021 Shared Tasks: Detecting English COVID-19 Fake News and Hindi Hostile Posts](#). **Patwa P**, Bhardwaj M, Gupta V, Kumari G, Sharma S, PYKL S, Das A, Ekbal A, Akhtar MD S, Chakraborty T. *Proceedings of the CONSTRAINT workshop at AAAI* 2021
- [Fighting an Infodemic: COVID-19 Fake News Dataset](#). **Patwa P**, Sharma S, PYKL S, Gupta V, Kumari G, Akhtar MD S, Ekbal A, Das A, Chakraborty T. *Proceedings of the CONSTRAINT workshop at AAAI* 2021
- [Proximity Sensing: Modeling and Understanding Noisy RSSI-BLE Signals and Other Mobile Sensor Data for Digital Contact Tracing](#). Shankar S, Kanaparti R, Chopra A, Sukumaran R, **Patwa P**, Kang M, Singh A, McPherson K, Raskar R. *Machine Learning for Mobile Health workshop at NeurIPS* 2020
- [Hater-O-Genius Aggression Classification using Capsule Networks](#). **Patwa P**, PYKL S, Das A, Mukherjee P, Pulabaigari V. *Proceedings of the 17th International Conference on Natural Language Processing (ICON)* 2020
- [SemEval-2020 Task 9: Overview of Sentiment Analysis of Code-Mixed Tweets](#). **Parth Patwa**, Gustavo Aguilar, Sudipta Kar, Suraj Pandey, Srinivas PYKL, Bjorn Gambäck, Tanmoy Chakraborty, Thamar Solorio, Amitava Das. *Proceedings of the 14th International Workshop on Semantic Evaluation (SemEval)* 2020. (**50+ citations**).
- [Aggression and Misogyny Detection using BERT: A Multi-Task Approach](#). Niloofar Safi Samghabadi, Parth Patwa, PYKL Srinivas, Prerana Mukherjee, Amitava Das, Thamar Solorio. *Proceedings of the 2nd Workshop on Trolling, Aggression and Cyberbullying (TRAC2)* 2020.
- [Understanding Chat Messages for Sticker Recommendation in Messaging Apps](#). Abhishek Laddha, Mohamed Hanoosh, Debdoot Mukherjee, **Parth Patwa**, Ankur Narang. *Proceedings of AAAI conference on Innovative Applications of Artificial Intelligence (IAAI)* 2020. (**Innovative Application Award**).
- [Large Scale Multilingual Sticker Recommendation in Messaging Apps](#). Laddha A, Hanoosh M, Mukherjee D, **Patwa P**, Ankur Narang. *AAAI AI magazine* 2021. (undergoing editorial changes).
- [Mobile Apps Prioritizing Privacy, Efficiency and Equity: A Decentralized Approach to COVID-19 Vaccination Coordination](#). Bae J, Sukumaran R, Shankar S, Sharma A, Singh I, Nazir H, Kang C, Srivastava S, **Patwa P**, Singh A, Katiyar P, Pamplona P, Raskar R *arXiv:2102.09372* 2020
- [COVID-19 Tests Gone Rogue: Privacy, Efficacy, Mismanagement and Misunderstandings](#). Morales M, Barbar R, Dandhi D, Landage S, Bae J, Vats A, Kothari J, Shankar S, Sukumaran S, Mathur H, Misra K, Saxena A, **Patwa P**, Sethuraman TV, Arseni M, Jakimowicz J, Anand S, Katiyar P, Mehra A, Iyer R, MUrli S, Mahindra A, Dmitrienko M, Srivastava S, Gangavarapu A, Penrod S, Sharma V, Singh A, Raskar R *arXiv:2101.01693* 2021.

- [Clinical Landscape of COVID-19 Testing: Difficult Choices](#). Gandhi D, Landage S, Bae J, Shankar S, Sukumaran R, **Patwa P**, Sethuraman TV, Katiyar P, Advani S, Anand S, Mahindra A, Barbar R, Singh A, Raskar R. *arXiv:2011.04202* 2020.
- [Challenges of Equitable Vaccine Distribution in the COVID-19 Pandemic](#). Bae J, Gandhi D, Kothari J, Shankar S, Bae J, **Patwa P**, Sukumaran P, Sethuraman TV, Misra K, Murali S, Saxena A, Jakimowicz K, Sharma V, Iyer R, Mehra A, Radunsky A, Katiyar P, Anand S, Advani S, Dhaliwal J and Raskar R. *arXiv:2012.12263* 2020.
- [Digital Landscape of COVID-19 Testing: Challenges and Opportunities](#). Gandhi D, Sukumaran R, Katiyar Priyanshi, Radunsky A, Anand S, Advani S, Kothari J, Jakimowicz K, Shankar S, Sethuraman T. V., Misra K, Saxena A, Landage S, Sonker R, **Patwa P**, Mahindra A, Mikhail D, Vaish K, Mehra A, Murali S, Iyer R, Bae J, Sharma V, Singh A, Barbar R, Raskar R. *arXiv:2012.01772* 2020.

## WORK, RESEARCH AND TEACHING EXPERIENCE

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### Data Science Researcher at PathCheck Foundation (MIT Spin-off)

September 2020 - present

*Advisor: Prof. Ramesh Raskar*

- Used ML to predict COVID-19 outbreak from self reported symptoms. Achieved 60% MRE. Paper accepted at Journal of Behavioral Data Science.
- In 5 Finalists out of 35 participants at the COVID-19 Symptom Data Challenge. Won \$5000 to build the solution.
- Worked on proximity detection using mobile signals. Paper accepted at Neurips2020 workshop.
- Also writing survey papers on challenges related to COVID19 testing and vaccines.
- Contributed to pitch deck for funding, funding proposals, competitions etc.

### Research Intern at University of South Carolina

May 2020 - May 2021

*Advisor: Prof. Amit Sheth*

- Research topic - detecting multi-modal (image and text) hate in memes, using Deep Learning.
- Proposed and Implemented LSTM + VGG architecture which achieve 65% accuracy.
- Gave talks and presentations on research papers.

### Research Intern at Virginia Tech

May 2020 - September 2020

*Advisor: Prof. Chandan Reddy*

- Developed an Empathetic Chatbot by training GPT with empathy dialogues data. Achieved 13 ppl.
- Added multilingual support, used emotion signal.
- Designed a web interface to interact with the chatbot.

### Data Science Intern at Hike Messenger

May 2019 - May 2020

- Implemented Transformer and Char CNN to generate message embeddings, improving existing method by 6%.
- Full paper accepted and awarded at IAAI 2020.
- Implemented hierarchical attention to predict future messages.
- Started as a summer intern, got offer to continue based on good performance.

### Teaching Assistant at IIIT Sri City

Aug 2019 - May 2020

- Courses: Data Structure and Algorithms, Advanced Data structures and Algorithms.
- Conducted labs, tutorials. Taught basic concepts. Designed programming questions and assignments.

### Data Science Intern at AutomationEdge

June 2018 - August 2018

- Built an automated IT ticket (email) classifier using machine learning.

## SKILLS AND TOOLS

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- Machine Learning, Neural Networks and Deep Learning, Natural Language Processing, Data Science, Transformers, Tensorflow, Keras, PyTorch, Numpy, Scikit-Learn, NLTK, Matplotlib, Seaborn, Python, C, C++, Django, SQL, RESTful API, html, LaTeX

## WORKSHOP ORGANIZING AND REVIEWING DUTIES

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- Co-Organizer and co-chair at 'De-factify: First Workshop on Multimodal Fact-Checking and Hate Speech Detection' at AAAI2022.
- Co-Organizer and shared task chair at the [First Workshop on Combating Online Hostile Posts in Regional Languages during Emergency Situation \(CONSTRAINT\)](#) at AAAI2021.
- Co-Organizer and track chair at [Semeval 2020 task 9: SentiMix: Sentiment Analysis for Code-Mixed Social Media](#).
- Program committee at the [5th workshop on Computational Approaches to Linguistic Code-Switching \(NAACL 2021\)](#).
- Reviewer at CONSTRAINT, SemEval2020, 2nd Workshop on Trolling, Aggression & Cyberbullying (TRAC2).

## POSITION OF RESPONSIBILITY AND VOLUNTEERING

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### **President and Founder at Epoch (Machine Learning club, IIITS)**

October 2019 - May 2021

– Founded and led the AI/ML club of IIITS.

– Conduct coding session, hackathons, paper reading sessions and give talks and tutorials on AI/ML topic.

### **Operations Executive at SocAIty (Non-profit Organization)**

August 2018 - April 2019

– Managed operations and internal communication, Volunteered at meetups.

- Volunteered to teach academically struggling juniors through the 'favorite 25' program.
- Part of the Operations Committee at 'MIT Vaccines for all' conference.

## AWARDS AND MISCELLANEOUS

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- 180+ google scholar citations.
- AAAI Innovative Application Award 2020.
- NeurIPS Registration Grant 2020.
- Finalists at the COVID-19 Symptom Data Challenge. won \$5000.
- AAAI student scholarship to attend AAAI20.
- 2 times finalist for the software edition of Smart India Hackathon 2020, 2021.
- Played U-14, U-16 chess at district and state level.