

PARUSH GERA

Department of Computer Science and Engineering ◊ University of South Florida, Tampa, FL 33620

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EDUCATION

Ph.D., Computer Science and Engineering	Expected Graduation: August 2023
Advisor: Dr. Tempestt Neal	
University of South Florida, Jan 2019	
M.S., Computer Science and Engineering	August 2018 – (Transferred into Ph.D. Program)
University of South Florida, Jan 2018	
Masters of Business Administration	August 2017
Punjabi University, Patiala, India	
Bachelors of Engineering, Computer Science and Engineering	May 2013
University Institute of Engineering and Technology, Panjab University	Hoshiarpur, India

TECHNICAL STRENGTHS

Operating Systems	Windows, Linux, Mac OS X
Programming Languages	Python,C,C++, C#, Java,Javascript, SQL, MATLAB
Software & Tools	NLTK, TextBlob, Gensim ,TensorFlow, Keras, Scikit-learn

TRAINING

CITI Program	Responsible Conduct of Research for Engineers
CITI Program	Social and Behavioral Responsible Conduct of Research
CITI Program	Social/Behavioral Investigators and Key Personnel

PUBLICATIONS

1. **Parush Gera**, Nadia Thomas, and Tempestt Neal. 2020. Hesitation While Posting: A Cross-Sectional Survey of Sensitive Topics and Opinion Sharing on Social Media. In *International Conference on Social Media and Society (SMSociety'20)*. Association for Computing Machinery, New York, NY, USA, 134–140. <https://doi.org/10.1145/3400806.3400822>
2. Md A. Noor, G. Kaptan, V. Cherukupally, **P. Gera**, T. Neal *A Closer Look at Mobile App Usage as A Persistent Biometric: A Small Case Study arXiv preprint arXiv:1912.11721 (2019)*.
3. T. Neal, M. A. Noor, **P. Gera**, K. Zanna and G. Kaptan, "Authenticating Phone Users Using a Gait-Based Histogram Approach on Mobile App Sessions," *2019 International Conference on Biometrics (ICB)*, Crete, Greece, 2019, pp. 1-7, doi: 10.1109/ICB45273.2019.8987418.

PRESENTATIONS

1. MD A. Noor, **P. Gera**, K. Zanna, G. Kaptan, and T. Neal. "Using Gait Recognition Techniques on Mobile App Sessions to Continuously Recognize Smartphone Users." 2019 Cyber Florida Research Symposium, Tampa, FL.
2. T. Neal, MD A. Noor, **P. Gera**, K. Zanna, and G. Kaptan. "Authenticating Phone Users Using a Gait-Based Histogram Approach on Mobile App Sessions." ICB 2019, Crete, Greece.

RESEARCH EXPERIENCE

Cyber Identity and Behavior Research Lab

USF Computer Science and Engineering Department

Primary Investigator, Dr. Tempestt Neal

Graduate Research Assistant

January 2019 - Present

Tampa, FL

- *Automated Target Detection from Text for Stance Analysis*
 - Building a larger dataset comparative to existing benchmark datasets for automated target detection for stance analysis.
 - Developing a natural language processing framework for better opinion understanding for stance detection by automating the target detection from user's text while incorporating the semantic and sentiment features.
 - Investigating linguistic models, such as CNNs, LSTMs, GRUs, and Attention Mechanisms, to infer higher level categories, and explore word embeddings methods, like Word2Vec and character embeddings, to learn semantic relationships with lower level targets.
- *Authenticating Phone Users Using a Gait-Based Histogram Approach on Mobile App Sessions*
 - Worked on authenticating users by recognizing patterns of smartphone application usage from mobile interaction data.
 - Utilized different dimensionality reduction and machine learning techniques for developing a generalized mobile authentication system.
- *Hesitation While Posting: A Cross-Sectional Survey of Sensitive Topics and Opinion Sharing on Social Media*
 - Conducted a cross-sectional online survey with college-level students on hesitation and likelihood to post on pre-selected diverse topics, and the reasoning for the responses.
 - Conducted an extensive analysis on collected responses to draw significant conclusions on gender-based differential choices for posting, the most sensitive topics while posting, among others.
- *A Closer Look at Mobile App Usage as A Persistent Biometric*
 - Evaluated deep learning models to explore the utility of mobile application data as a behavioral biometric modality.
 - Represented mobile application usage as simple images wherein each pixel value provides some information about the user's application interaction patterns.

Computational Sociodynamics Lab

USF Computer Science and Engineering Department

Primary Investigator, Dr. Giovanni Luca Ciampaglia

Graduate Research Assistant Volunteer

Nov 2019 - Present

Tampa, FL

- *Mapping the Vaping Epidemic using Twitter Metadata*
 - Working on Twitter metadata of Vape related tweets to map the computational results with the state wise lung injury/death data by Centers for Disease Control and Prevention.
 - Working toward generalizing the computational model for other public health topics to enable early prediction and regional analysis.

- *Analyzing Twitter Conversation Cascades for information Diffusion*
 - Currently, matching claims with potential misinformation to prior fact-checks is difficult. We plan to mine Twitter conversational cascades about known COVID-19 misinformation and its debunking.
 - Developing novel machine learning algorithms to automatically match unseen claims to prior verifications, and to trace the competition in the diffusion of accurate and inaccurate information about the same topic.

Artificial/Human Reasoning Research Lab
USF Computer Science and Engineering Department
Primary Investigator, Dr. John Licato
Graduate Research Assistant

June 20 - Present
Tampa, FL

- *Identifying Writing Style by Leveraging Cognitive Biometrics of Users During Writing Tasks*
 - Working on developing natural language processing framework to learn different writing styles of an author which he/she use for writing different types of documents like professional document, informal document, rewriting/paraphrasing another's work, emotional journaling.

INTERNSHIPS

Intern, Ritz Travelz Pvt . Ltd
Chandigarh, India

June 17 - July 2017

- Studied market potential analysis of Cruise Travel Industry using machine learning techniques for mining of data, analysis of data, recognizing patterns of customers travelling to various destinations and using these patterns to distinguish various seasons of travel.
- Leveraged mined information to set cruise ticket costs using regression analysis and established the required customer base to achieve the set profitable target.

Intern, TATA Teleservices Limited
Mohali, India

Jan 13 - May 2013

- Studied SDH, NMS, and CDMA and Customization of Alarms in order to check their daily status and report about the criticality of the alarms generated.

Intern, Chandigarh Centre - National Institute of Electronics and Information Technology
June 12 - July 2012
Chandigarh, India

- Worked on the project JAVA 2 Platform, Enterprise Edition (Notepad).
- Worked on developing a word processing notepad which provided features such as different font styles, text alignment, spacing, checking spellings and grammar, inserting images, and aligning objects.

Trainee, SPIC-Centre of Excellence, PEC University of Technology
Chandigarh, India

June 11 - July 2011

- Worked on a project using C# .NET (Automobile Servicing- CRM).
- Developed a CRM (Customer Relationship Manager) of a car servicing company which handled the timely scheduling of servicing of automobiles. Generation of automatic reminders for booking in advance. Periodic report generation of all the vehicles handled.

WORK EXPERIENCE

Graduate Teaching Assistant

Department of Computer Science and Engineering, USF

May 2018 - Present

Tampa, FL

- Worked under System Administrator and assisted with Level 1 & 2 technical support requests in active Unix/ Linux/Windows environments, May 2018 - Aug 2019.
- Teaching Assistant - Introduction to Database, Fall 19, Fall 20 (55 Students)
- Teaching Assistant - IT Data Structures, Spring 20 (26 Students)
- Teaching Assistant - Introduction to Hadoop and Big Data, Spring 20 (52 Students)

Sr Travel Counsler, Ritz Travelz Pvt . Ltd

Information Technology Park

Feb 2013 - Nov 2017

Chandigarh, India

- Worked as Trainer to train members with the global travel tools/software like Amadeus, Sabre.
- Contributed in achieving the set profit target by maintaining the quality of the work.

PROJECTS

Improving the accuracy of CIFER-10 dataset using Deep Learning Models Spring 20

- Increased the accuracy of a model from 76% to 88.24% by fine tuning it by analyzing the convolutional neural network. Learned how the hyperparameters contributes in tuning a model.

Using AWS Rekognition for Image Analysis

Fall 19

- Used the Amazon cloud services to build a model for object detection.

Deep Learning model for Game of Deep Learning Ship Dataset from Kaggle Fall 19

- Studied a Xception model with more than 100 layers and built a deep learning model with 15 layers without any statistical significant difference in the classification.

Operating System - mCertiKOS

Spring 2019

- Developed Bootloader using assembly language
- Implemented physical and virtual memory management.
- Implemented process management and trap handling.
- Implemented Copy on write Fork mechanism.

Profiling internet users

April 2018

- Worked on IP traffic data extracted from Cisco NetFlow version 5 which included packets, Octets, beginning and ending of each flow, source and destination port numbers, source and destination IP addresses and many other variables.
- Demonstrated statistical differences for inter-person and intra-person comparisons of temporal patterns of internet usage.
- Build a model to demonstrate if the Internet usage of each subject is statistically indistinguishable when compared to the Internet usage of the same subject over time, while simultaneously being statistically distinguishable when compared to Internet usage of other subjects.