Supraja Gurajala, Ph.D.
Assistant Professor
Department of Computer Science
Dunn 307, SUNY Potsdam,
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Research Expertise:

Machine Learning, Big Data and Data Analytics, Databases, and Computer Networks

Education:

PhD., Computer Science, Clarkson University, Potsdam, NY — Aug 2018
Thesis: Social Media Sensing: Towards Accurate Prediction and Analysis of Events

M.S., Computer Science, Clarkson University, Potsdam, NY — Nov 2004

B.E., Electronics Engineering, Vellore Institute of Technology, India — June 2001

Appointments:

Assistant Professor, Department of Computer Science, SUNY Potsdam, Potsdam, NY — 2018 Fall - present

Instructor, Department of Computer Science, SUNY Potsdam, Potsdam, NY — 2017 - 2018 Spring

Teaching Assistant, Computer Science, Clarkson University — 2013 - 2016

Adjunct Faculty, Computer Information Systems, SUNY Canton, Canton, NY — 2010 - 2013

Graduate Assistant, Mathematics and Computer Science, Clarkson University, Potsdam, NY — 2002 - 2004

Courses Taught:

1. CIS 201 - Computer Science I, Lecture, lab and recitation.
2. CIS 203 - Computer Science II, Lab
3. CIS 301 - Theory of Computation
4. CIS 325 - Data Analysis & Visualization
5. CIS 410 - Computer Networks
6. CIS 420 - Database Systems
7. CIS 431 - Machine Learning
8. CIS 475 - Introduction to Cryptography
9. CIS 280 A – Selected Languages C++
10. CIS 280 A – Selected Languages PERL

Awards:

Favorite Professor Award by students 2020

Sanda Briggs outstanding teaching assistant award for computer science, 2015

Sanda Briggs outstanding teaching assistant award for computer science, 2016

Pre-Print publication :

1. Vijay Kumar, Dinushani Senarathna, Supraja Gurajala, William Olsen, Shantanu Sur, Sumona Mondal, Suresh Dhaniyala, "Understanding the source components captured by the Purple Air Network." submitted to ChemRxiv. Dec 2022.

Peer-Reviewed Publications:

Under Review:

1. Vijay Kumar, Dinushani Senarathna, Supraja Gurajala, William Olsen, Shantanu Sur, Sumona Mondal, Suresh Dhaniyala, " Spectral analysis approach for assessing accuracy of a low-cost air quality sensor network data." submitted to ACS ES&T Engineering. Feb 2023.

Published:

1. Mondal M., Chaipitakporn C., Kumar V., Wangler B., Gurajala S., Dhaniyala S., Sur S., COVID-19 in New York state: Effects of demographics and air quality of infection and fatality. Published in Science of the Total Environment Volume 807, Part 1. https://doi.org/10.1016/j.scitotenv.2021.150536., Oct 2021.

2. Gurajala S., Dhaniyala S., Matthews J. N., Understanding Public Response to Air Quality Using Tweet Analysis. Social Media + Society. https://doi.org/10.1177/2056305119867656, May 2019.

3. Gurajala S. and Matthews J.N., Twitter Data Analysis to Understand Societal Response to Air Quality. In Proceedings of the 2018 International Conference on Social Media & Society. ACM, July 2018.

4. Gurajala S., White J. S., Hudson B., Voter R. B., and Matthews N. J., "Profile Characteristics of Fake Twitter Accounts." Big Data & Society 3, no. 2 (2016): 2053951716674236. July 2016.

5. Gurajala S., White J. S., Hudson B. and Matthews J. N., Fake Twitter Accounts: Profile Characteristics Obtained Using an Activity-Based Pattern Detection Approach, In Proceedings of the 2015 International Conference on Social Media & Society (p. 9). ACM, July 2015.

6. M. Sarkar, S. Gurajala and S. Kumar, A MAC Protocol to Support QoS for Multimedia Traffic Transmission over Ad Hoc Networks, ACM International Wireless Communications and Mobile Computing Conference (IWCMC'07), Honolulu, Hawaii, August 12–16, 2007.

7. S. Kumar, M. Sarkar, S. Gurajala and John D. Matyjas, MMMP: A MAC Protocol to Ensure QoS for Multimedia Traffic over Multi-hop Ad Hoc Networks, Journal of Information Processing Systems, Vol. 4, No.2, June 2008, pp. 75-86.

8. M. Sarkar, S. Gurajala and S. Kumar, A QoS-Aware Medium Access Control Protocol for Real Time Traffic in Ad Hoc Networks, 18th IEEE Annual International Symposium on Personal Indoor and Mobile Radio Communications (PIMRC'07), Athens, Greece, 3-7 Sept. 2007.

Conference/Research Presentations:

1. Brandon Beattie, Supraja Gurajala, Suresh Dhaniyala, Evolution of AAAR Topics over the Past 40 Years: An Automated Analysis. American Association for Aerosol Research (AAAR) conference, October 2022
2. Dinushani Senarathna, Vijay Kumar, Shantanu Sur, Suresh Dhaniyala, Supraja Gurajala, Sumona Mondal, Evaluation and modeling of data from low-cost air quality sensors for accurate PM2.5 estimation. Air Sensors International Conference, May 2022.
3. Vijay Kumar, Dinushani Senarathna, Supraja Gurajala , William Olsen, Shantanu Sur, Sumona Mondal, Suresh Dhaniyala, Spectral analysis of low-cost sensor network data. Air Sensors International Conference, May 2022.
4. Vijay Kumar, Dinushani Senarathna, Supraja Gurajala, William Olsen, Shantanu Sur, Sumona Mondal, Suresh Dhaniyala, Understanding the Source Components Captured by the Purple Air Network. American Association for Aerosol Research (AAAR) conference, October 2022
5. Dinushani Senarathna, Vijay Kumar, Shantanu Sur, Suresh Dhaniyala, Supraja Gurajala, Sumona Mondal, Performance of Correction Models for Accurate PM2.5 Estimation from Low-Cost Air Quality Sensor Data. American Association for Aerosol Research (AAAR) conference, October 2021.
6. Vijay Kumar, Dinushani Senarathna, Suresh Dhaniyala, Shantanu Sur, Supraja Gurajala, Sumona Mondal, Spatiotemporal Analysis of PM2.5 in Chicago Using Data from EPA and Low-Cost Sensor Network. American Association for Aerosol Research (AAAR) conference, October 2021.
7. Vijay Kumar, Bridget Wangler, Chaya Chaipitakporn, Shantanu Sur, Supraja Gurajala, Suresh Dhaniyala, Sumona Mondal: Infection vs Fatality of COVID-19 in New York State: Effects of Demographics and Poor Air Quality, American Association for Aerosol Research (AAAR) conference, October 2020.
8. Dinushani Senarathna, Vijay Kumar, Bridget Wangler, Shantanu Sur, Supraja Gurajala, Suresh Dhaniyala, Sumona Mondal: Towards Building an Optimal LUR Model for Air Quality Prediction Using Machine Learning Approach., E-RAPS (Research and Projects Showcase) Conference, Clarkson University, Potsdam NY July 2020.
9. Kumar V., Mondal S., Gurajala S., Sur S., Dhaniyala S., Evaluating spatio-temporal accuracy of LUR models using low-cost sensor network data, 2020 Air Sensors International Conference, Pasadena, California, May 12-15, 2020. [Cancelled due to COVID]
10. Gurajala S., Dhaniyala S., Big Data and Air Quality: Using Twitter Data for Air Quality Monitoring, American Association for Aerosol Research 37th Annual Conference, Portland, Oregon, Oct 14 – Oct 18, 2019.
11. Gurajala S., Data Visualization, Computer Science ACM seminar, SUNY Potsdam, Potsdam, NY, Nov 2019.
12. Workshop co-organizer/instructor: Sensors and Data Analytics, Aug 5 to 9 (5-day workshop), Clarkson University, Potsdam, NY, 2019.
13. Kumar V., Patel V., Sur S., Dhaniyala S., Gurajala S., Mondal S., Air quality prediction using LUR model: Parameter reduction and optimization, 3rd Annual Spring Research And project Showcase conference, Clarkson University, Potsdam, NY, April 2019.

14. Kumar V., Patel V., Sur S., Dhaniyala S., Gurajala S., Mondal S., LUR model for air quality: Optimization of parameter space, 13th Annual Probability & Statistics Day At UMBC, Baltimore, MD, April 2019
15. Gurajala S., Challenges in monitoring air quality using social media data, AIR Lab, Clarkson University, Potsdam NY, 2018, December.
16. Gurajala S., BigData: Towards accurate prediction of events, Computer Science ACM seminar, SUNY Potsdam, Potsdam, NY, 2018, October.
17. Gurajala S., Can we build accurate spatio-temporal event models with social media data?, David A. Walsh‘67 Arts & Sciences Conference , Potsdam NY, 2018, August.
18. Gurajala S., Twitter data analysis to understand societal response to air quality. 2018 International Conference on Social Media & Society, Copenhagen Denmark 2018, July.
19. Gurajala, S. "Big Data and its Applications", Computer Science ACM seminar, SUNY Potsdam, Potsdam, NY, 2017, October.
20. Gurajala S., Fake Twitter accounts: Profile characteristics obtained using an activity-based pattern detection approach. 2015 International Conference on Social Media & Society, Toronto, Canada 2015, July.

Conferences/Workshops Attended:

1. E- RAPS (Research and Projects Showcase) Conference, Clarkson University Potsdam, NY July 2021.
2. E- RAPS (Research and Projects Showcase) Conference, Clarkson University Potsdam, NY. July 2020
3. Completed Online Pedagogy (Session 5) course to facilitate development of the knowledge, skills, and attitudes for effective online teaching and learning
4. CCI Winter Workshop, SUNY Potsdam, Potsdam, NY, January 22 2020.
5. Sensors and Data Analytics Workshop, Aug 5 to 9 (5-day workshop), Clarkson University, 2019.
6. Statistical Decision-Making using Bayesian Inference, Workshop, 9th and 10th May, Clarkson University, 2019.
7. ACM New York Celebration of Women in Computing, April 12-13, 2019, Lake George, NY.
8. David A. Walsh‘67 Arts & Sciences Conference, Clarkson University, Potsdam, NY, August 2018
9. 2018 International Conference on Social Media & Society, Copenhagen Denmark 2018, July.
10. ACM New York Celebration of Women in Computing, April 21-22 2017, Rochester, NY. Escorted eight SUNY Potsdam Computer Science students.
11. 2015 International Conference on Social Media & Society, Toronto, Canada, July 2015.

Research Committee:

1. Ph.D. Proposal Committee member - Order restricted inference to optimize sample size and powe in ANOVA and regression by Samarasuriyage Dinushani Senarathna, Clarkson University, Potsdam, Nov 2022.

2. Ph.D. Proposal Committee member - Application of time series and spatial analysis for accurate prediction of air quality from low-cost sensor data by Vijay Kumar, Clarkson University, Potsdam July 2022

Research Proposals:

1. Assisted medical researchers in St. Lawrence Health System in submitting a proposal to PCORI Patient-Centered Outcomes Research Institute to study CTD-ILD connective tissue disease-associated interstitial lung disease, Jan 2021 (unfunded).

2. Air quality sensor network for exposure assessment in Environmental Justice area, Prof. Suresh Dhaniyala (PI), Dr. Brian Frank, Prof. Supraja Gurajala, Prof. Sumona Mondal, NYSERDA, May 2020, Amount Requested: $500000, (unfunded).

3. Applying Novel Approaches to Improve Long-Term Exposure Assessment of Outdoor Air Pollution for Health Studies, Suresh Dhaniyala (PI), David Rich, Philip K. Hopke, Supraja Gurajala, Health Effects Institute (HEI), RFA 19-1: $800,000, March 2019 (unfunded).

4. A low-cost air quality sensor network for accurate exposure assessment, Suresh Dhaniyala (PI), David Rich, Philip K. Hopke, Supraja Gurajala, NYSEDA, $575,325, 03/01/2019 to 02/28/2022 (unfunded).

5. SUNY Potsdam Computer Science (SPOCS) Scholarship Program, National Science Foundation, Spring 2017 (unfunded).

6. SUNY Potsdam Computer Science (SPOCS) Scholarship Program, National Science Foundation, Spring 2018 (unfunded).

Papers Reviewed:

- Reviewed a paper for Big Data & Society Journal.

University Service:

Committee assignments:

- Arts and Science Council Member Fall 2021 to Spring 2024
- Arts and Science Curriculum Committee Member. May 2020 to June 2021 & May 2022 to June 2025
- Academic Programs and Curriculum Committee Fall 2021 to Spring 2023
- Business Affairs Committee Member Fall 2021 to Spring 2023
- Student Affairs Committee Member May 2020 to Spring 2022
- Student Affairs Committee Chair May 2020 to May 2021
- Faculty Senate Executive Committee Member. May 2020 to May 2021
- Computer Science Faculty Senate Delegate, Fall 2019 to present
- Open House: Represented Computer Science department in open houses at SUNY Potsdam, Spring 2019 and Fall 2019.

- Major Affairs: Represented Computer Science department in major affairs at SUNY Potsdam, Fall 2018

Synergistic activities:

- Developed Data Analytics track for Computer Science BS degree and as a part of it developed and offered three new courses: Machine Learning, Database Systems, and Data Analysis &Visualization
- Developed and offered a new course, Introduction to Cryptography for Computer Security track.
- Organized two talks by experts in Data Analytics form Clarkson University in Fall 2018 and Fall 2019.
- Conducted resume workshop for computer science students Fall 2019
- Research talk presentations in Computer Science department Fall 2017, 2018, and 2019

Computer Science Board of Advisors Meetings: Participated in computer science BOA meetings every semester since Spring 2017 to present.

Student Advising: Advised about 20 students each semester from Fall 2017 to present.

Community Service:

- Assisted medical researchers in St. Lawrence Health System in submitting a proposal to PCORI Patient-Centered Outcomes Research Institute to study CTD-ILD connective tissue disease-associated interstitial lung disease. Spring 2020
- Advisory committee member for St. Lawrence Health System Clinical and Rural Health Research Department's Patient-Centered Research Focus Group. 2021
- Advisory committee member for St. Lawrence Health System Clinical and Rural Health Research Department's PCORI-DISRUPTS group. 2021 to present
- Mentor for Friends of India Association of Clarkson University, 2019 - present