Aniruddha Adiga

Biocomplexity Institute, University of Virginia
PO Box 400298, Charlottesville, VA 22904
☏ *919-780-3403*
✉ *aniruddha@virginia.edu, aniadiga@gmail.com*

▬▬▬ Current Position

Jul' 21- present	**Research Assistant Professor**. Biocomplexity Institute (BI), UVA P.O. Box 400298, Charlottesville, VA 22904-4298

▬▬▬ Research Interests

- Signal processing, machine learning, forecasting, and bigdata analysis
- Statistical signal processing, deep learning, transfer learning, timeseries analysis, image processing, and inverse problems
- Sampling theory, convex and non-convex optimization, and wavelet analysis.

▬▬▬ Current Work

- Computational epidemiology, forecasting of epidemiological signals, invasive species modeling, neuroscience.

▬▬▬ Education and Work Experience

Aug'10 – May'17	**PhD**, *Spectrum Lab*, Dept. Elec. Engg., IISc, Bangalore, India. Mentor: Prof. C. S. Seelamantula
Jul'07 – Jul'10	**Master of Technology**, *TIDSP Lab*, Dept. Elec. Engg., IIT Bombay, India. Mentor: Prof. V. M. Gadre
Jul'01 – Jul'05	**Bachelor of Engineering**, Telecommunications, VTU, Karnataka, India.

▬▬▬ Work Experience

Jun'19- Jun'21	**Post doctoral research associate**, *NSSAC, BII*, UVA, Charlottesville. Mentor: Prof. M. Marathe
Jun'18- May'19	**Post doctoral fellow**, *VISSTA Lab, Dept. Elec. & Comp. Engg.*, NCSU, Raleigh. Mentor: Prof. H. Krim
May'17- May'18	**Research Associate**, *Spectrum Lab*, Dept. Elec. Engg., IISc, Bangalore, India. Mentor: Prof. C. S. Seelamantula
Jan'12 – Jul'12	**Internship**, *Idiap Research Institute*, Martigny, Switzerland. Mentor: Dr. M. M. Doss

Awards & Fellowships

2022   **Best Paper Award at the IEEE Big Data 2022 Conference (acceptance rate 19%)**, Tokyo, Japan: "Enhancing COVID-19 Ensemble Forecasting Model Performance Using Auxiliary Data Sources"

2022   Awarded the Center for Open Sciences - Flu fellowship

2021   **Finalist team ACM Gordon Bell Special Prize for HPC-Based COVID-19 Research**. "Data-Driven Scalable Pipeline using National Agent-Based Models for Real-time Pandemic Response and Decision Support"

2016   Best presentation of PhD work (synopsis) at the IISc Division of Electrical Sciences Research Students Symposium 2016.

2012   Awarded the Indo-Swiss Joint Research Program (ISJRP) Fellowship during PhD and collaborated with Dr. Mathew Magimai Doss at the Idiap Institute, Martigny, Switzerland.

2005 − 2007   Awarded the Junior Research Fellowship and worked under Dr. S. V. Narasimhan at the National Aerospace Laboratories, Bangalore

.

Publications Summary

– Journals 11, Conferences 15, Invited Book Chapters 3, workshops/preprints 9, technical reports 200+

– Citations 1100+

Grants Summary

Current   PI for 2024-25 Influenza Forecasting program entitled "Development of Forecasts and/or Scenario Projections for Influenza to Inform Public Health Decision-Making" in collaboration with Centers for Disease Control and Prevention (CDC) and the Council of State and Territorial Epidemiologists (CSTE). (PHOENIX)

Completed   Co-PI for "Development of forecast, analytic, and visualization tools to improve outbreak response and support public health decision-making" in collaboration with the Centers for Disease Control and Prevention (CDC) and the Council of State and Territorial Epidemiologists (CSTE). (SPHINX) ($250,000$, Feb 2023−Jul. 2024)

Completed   Co-PI for "Geography and Respiratory Illness based Flu Forecasting with InterNational context (GRIFFIN)" in collaboration with the Centers for Disease Control and Prevention (CDC) and the Council of State and Territorial Epidemiologists (CSTE).

Completed   Co-PI for 2022-23 Influenza Forecasting program "Development of Forecasts and/or Scenario Projections for Influenza to Inform Public Health Decision-Making" in collaboration with the CDC and the Council of State and Territorial Epidemiologists (CSTE) ($125,000$, Oct. 2022−Jul. 2023)

Completed   Co-PI for "NSF-RAPID: Modeling and Analytics for COVID-19 Outbreak Response in India: A multi-institutional, US-India joint collaborative effort" ($200,000$, Oct. 2021− Jun. 2022)

Mentorship

Current Jingyuan Chou (UVA, PhD candidate), Nibir Chandra Mandal (UVA, PhD candidate), Arya Palla (UVA, undergraduate), Anshul Chiranth (UVA, undergraduate), Burak Ayyorgun (High school)

Past Lijing Wang (UVA, PhD), Finn Mokrzycki (UVA, undergraduate), Anthony Mathias Panagides (UVA, undergraduate), Ethan Choo (UVA, undergraduate), Surbhi Singh (UVA, undergraduate), Adham Ibrahim (High school)

Professional Activities

Invited talks Annual CSTE/CDC Infectious Disease Forecasting Workshop (September 2023)
Department of Electrical Engineering, Indian Institute of Science (July 2023)
Infectious Disease Forecasting at the 2nd International Workshop on Forecasting for Social Good (June 2021).
Global Pervasive Computational Epidemiology seminar series (September 2021).

Peer Review Reviewed articles for PLOS Computational Biology, Lancet Infectious Disease, Lancet Global Health, Nature Scientific Reports, Frontiers BigData, Journal of the Indian Institute of Science, and AAAI (conference).

Research Activities

- At BI, co-leading and involved in multiple projects related to forecasting of infectious diseases, data analysis, and the mapping of invasive plant species spread. Work involves the development of mathematical models for time series forecasting, big data analytics, and signal processing.

- BI COVID-19 response team: Co-led the forecasting efforts and coordinating our participation in CDC-partnered ForecastHub (https://covid19forecasthub.org/) and the European CDC's ForecastHub (Mar 2021−July 2022, https://covid19forecasthub.eu/) collaboration for over two years. Have developed forecast models and guided a team of graduate, undergraduate, postdocs, and data scientists. Forecasts are consumed by US, European CDC and other health agencies for decision making. As part of the collaboration, regularly interact with other researchers/PIs. The work has resulted in several publications, efficient software pipelines that utilize high-performance computing, and innovative forecast visualization dashboards.

- Virginia Department of Health (VDH) collaboration: Senior personnel on the VDH collaborative project. Guided data collection processes and developed novel signal processing techniques to understand and quantify changes in epidemiological signals that allow for outbreak detection, behavioral changes, and integration of novel surveillance streams.

- Active collaboration with the Brain Institute researchers, UVA on building functional models of the brain to study pain nociception.

- Invasive plant species mapping: Designed and implemented a deep-learning-based invasive plant species detection and spread mapping system using remote-sensing data in biodiversity hotspots.

Research Impact

Publications
Research published in top-tier conferences and journals have contributed to both innovative model designs and robust system development in multi-disciplinary applications with high social impact.

Modeling
Paper on phase-based ensembling is a novel framework for training ensemble models using multiple datasets. This work is considered an important contribution to ensemble modeling and forecasting field by the AI community and also received the best paper award at the IEEE Bigdata 2022, a top-tier AI conference (Acceptance rate 19%).

Data & software
Detailed COVID-19 and influenza forecasts at county, state and national level from multiple models available for public access and analysis. Models optimized for large-scale deployment by employing high-performance computing and the codes are open source. Recipient of the center for open science flu fellowship; working with public health agencies in developing a suite of open-access forecasting tools specific to their needs.

Collaborative forecasting
Leading the modeling team that is part of the US CDC/CSTE FluSight. Co-led the BI-team submissions to CDC COVID-19 ForecastHub, and EU CDC COVID-19 efforts. Provided forecasts for over two years (over 150 weeks). Out of the dozens of teams, we are one of the only few teams that have consistently contributed weekly forecasts for national, states, and 3000+ counties. Our model ranks top in terms of forecast coverage of state-level COVID-19 cases. These efforts have helped collectively push the understanding of collaborative forecasting with research featured in several forecasting consortium-related papers published in Nature Scientific Data, Elife, MMWR, Lancet Regional Health-Americas, etc. Additionally, description of results and enhancements pertaining to our models have been published in KDD, IAAI and IJCAI.

State department support
High-resolution COVID-19 cases forecasts and scenarios for Virginia counties from our model briefed weekly to senior officials at the Virginia Governor's office (COVID-19 task force) since 2020. Previously, was a coordinator for the biosurveillance research, modeling, and situational awareness efforts with Virginia Department of Health (VDH). Presentations and summaries from the meeting available as 200+ technical reports for public information.

Social impact
Multinational, US multi-scale COVID-19 forecasts and US state-level Influenza hospitalizations forecasts from our models are shared on CDC, CSTE, and VDH dasbboard/websites for policy makers and public communication. Detailed campus-level COVID-19 case forecasts briefed to multiple Virginia universities (UVA, VT, JMU, and VCU) for monitoring outbreaks during 2020 and 2021 academic years. The AI system for invasive plant species mapping has helped understand species distribution in inaccessible regions of Nepal and also received a letter of recognition from the Ministry of Agriculture and Livestock Developement, Government of Nepal. Multiple papers in forecasting and invasive plant species mapping have been published in conferences focusing on AI with significant social impact. Work has been featured in 400+ media articles.

Influenza forecasts: (https://www.cdc.gov/flu/weekly/flusight/flu-forecasts.htm)

COVID-19 forecasts:(https://www.cdc.gov/coronavirus/2019-ncov/science/forecasting/hospitalizations-forecasts.html)

Grants The efforts have resulted in five grant submissions with three accepted and two under review: Two CDC/CSTE grants accepted and ongoing; one NSF Rapid completed successfully.

Past Research Activities

Post doctoral fellow, NCSU Worked on the theory of optimal transport (OT), a versatile concept for comparing probability densities explored it for image analysis such as change detection and semantic representation. OT problem is computationally demanding for which we developed a stochastic-gradient-descent-based optimization strategy. Also, in colloboration with a graduate student, we developed a deep neural network architecture that incorporates the multiresolution data analysis philosophy for super-resolution of images.

Research Associate, IISc We explored the possibility of learning sparsity-enforcing statistical model from the data using deep neural networks. We developed a Bayesian deep deconvolutional neural network (BD2N2) in collaboration with a masters student and researchers from Linz university, Austria and deployed it for localization of fluorophores in stochastic localization microscopy. In another project, we proposed a novel wavelet-based reconstruction of signals that are the output of a self-reset analog-to-digital converters (SRADC), a revolutionary ADC that enables unlimited dynamic range for signals.

Doctoral thesis, IISc **Title.** *Sparsity motivated auditory wavelet representation and blind deconvolution*
The focus was on the development of deterministic and statistical signal models that enable the extraction of indiscernible sparse events from their measurements. We first considered smooth signals (characterized by regularity conditions) with singularities embedded and developed a multi-scale auditory-wavelet transform called Gammatone wavelet transforms to extract the singularities. We then considered the modeling of the sparse events within a statistical framework and developed a sparsity-driven technique to extract the events. We showed the applicability of the models to epoch extraction in speech and fluorophore localization in microscopy images.

Internship at Idiap We developed robust features called Gammatone wavelet cepstral coefficients that enable reduction of data dimensionality for automatic speech recognition systems.

M. Tech., IIT Bombay We developed a finite impulse response approximation to the Meyer wavelet using the Eigenfilter design method, a low complexity discrete time filter design method. In addition to the low design complexity, the eigenfilter method can also incorporate variety of time and frequency domain constraints such as Nyquist and flatness constraint into the design problem with relative ease.

Computer Skills

Programming MATLAB, Python, C.

Libraries TensorFlow, Keras, PyTorch, Gurobi, CVX, MATLAB Optimization toolbox, GDAL, DSP processors.

Publications

Conferences

1. **Aniruddha Adiga**, Siva Athreya, Kantha Rao Bhimala, Ambedkar Dukkipati, Tony Gracious, Shubham Gupta, Benjamin Hurt, Gursharn Kaur, Bryan Lewis, Madhav Marathe, Vidyadhar Mudkavi, Gopal Krishna Patra, Nihesh Rathod, Rajesh Sundaresan, Srinivasan Venkataramanan, Sarath Yasodharan. 2023. *A Multi-Team Multi-Model Collaborative COVID-19 Forecasting Hub for India.* Accepted at the Winter Simulation Conference 2023.

2. **Aniruddha Adiga**, Gursharn Kaur, Benjamin Hurt, Lijing Wang, Przemyslaw Porebski, Srinivasan Venkatramanan, Bryan Lewis, and Madhav Marathe. 2023. *Phase-Informed Bayesian Ensemble Models Improve Performance of COVID-19 Forecasts.* In the 2023 Innovative Applications of Artificial Intelligence (IAAI-23) at AAAI-23.

3. **Aniruddha Adiga**, Gursharn Kaur, Benjamin Hurt, Lijing Wang, Przemyslaw Porebski, Srinivasan Venkatramanan, Bryan Lewis, and Madhav Marathe. 2022. *Enhancing COVID-19 Ensemble Forecasting Model Performance Using Auxiliary Data Sources,* in the 2022 IEEE International Conference on Big Data (Big Data), IEEE, 1594–1603, 2022. (**Best paper**, Acceptance rate 19%)

4. Lijing Wang, **Aniruddha Adiga**, Jiangzhuo Chen, Adam Sadilek, Srinivasan Venkatramanan, and Madhav Marathe, *Causalgnn: Causal-based graph neural networks for spatio-temporal epidemic forecasting,* in the Proceedings of the AAAI Conference on Artificial Intelligence, 12191–12199, 2022. (Acceptance rate 15%)

5. **Aniruddha Adiga**, Lijing Wang, Benjamin Hurt, Akhil Peddireddy, Przemyslaw Porebski, Srinivasan Venkatramanan, Bryan Leroy Lewis, and Madhav Marathe, *All models are useful: Bayesian ensembling for robust high resolution covid-19 forecasting,* in the Proceedings of the 27th ACM SIGKDD Conference on Knowledge Discovery & Data Mining, 2505–2513, 2021. (Acceptance rate 19%)

6. Benjamin Hurt, **Aniruddha Adiga**, Madhav Marathe, and Christopher L Barrett, *Informing university COVID-19 decisions using simple compartmental models,* In the IEEE 2021 Winter Simulation Conference (WSC), 1–12, 2021.

7. Alok Talekar, Sharad Shriram, Nidhin Vaidhiyan, Gaurav Aggarwal, Jiangzhuo Chen, Srini Venkatramanan, Lijing Wang, **Aniruddha Adiga**, Adam Sadilek, Ashish Tendulkar, and others, *Cohorting to isolate asymptomatic spreaders: An agent-based simulation study on the Mumbai Suburban Railway,* in the Proceedings of the 20th International Conference on Autonomous Agents and MultiAgent Systems (AAMAS 21), May 2021 Pages 1680–1682.

8. Lijing Wang, **Aniruddha Adiga**, Srinivasan Venkatramanan, Jiangzhuo Chen, Bryan Lewis, and Madhav Marathe, *Examining deep learning models with multiple data sources for covid-19 forecasting,* in the 2020 IEEE International Conference on Big Data (Big Data), IEEE, 3846–3855.

9. Pavan Kulkarni, Jishnu Sadasivan, **Aniruddha Adiga**, and Chandra Sekhar Seelamantula. 2020. Epoch Estimation from a Speech Signal Using Gammatone Wavelets in a Scattering Network. In the 2020 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), IEEE, 7364–7368, 2020.

10. Kenneth Tran, Ashkan Panahi, **Aniruddha Adiga**, Wesam Sakla, and Hamid Krim, *Nonlinear multi-scale super-resolution using deep learning,* In 2019 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), IEEE, 3182–3186, 2019.

11. Sunil Rudresh, **Aniruddha Adiga**, Basty Ajay Shenoy, and Chandra Sekhar Seelamantula,

Wavelet-based reconstruction for unlimited sampling, in the 2018 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), IEEE, 4584–4588, 2018.

12. Suraj Srinivas, **Aniruddha Adiga**, and Chandra Sekhar Seelamantula, *Controlled blurring for improving image reconstruction quality in flutter-shutter acquisition,* in 2014 IEEE International Conference on Image Processing (ICIP), IEEE, 5826–5830, 2014.

13. **Aniruddha Adiga** and Chandra Sekhar Seelamantula, *An alternating $\ell_p^-\ell_2$ projections algorithm (ALPA) for speech modeling using sparsity constraints,* in 2014 19th International Conference on Digital Signal Processing, IEEE, 291–296, 2014.

14. **Aniruddha Adiga**, Mathew Magimai, and Chandra Sekhar Seelamantula, *Gammatone wavelet cepstral coefficients for robust speech recognition,* in 2013 IEEE International Conference of IEEE Region 10 (TENCON 2013), IEEE, 1–4, 2013.

15. SV Narasimhan and **Aniruddha Adiga**, *Shift Invariant Discrete Cosine Harmonic Wavelet Transform and Its Application to Denoising,* in IEEE INDICON, 6–8, 2007.

Journals

1. Baltazar Espinoza, **Aniruddha Adiga**, Srinivasan Venkatramanan, Andrew Scott Warren, Jiangzhuo Chen, Bryan Leroy Lewis, Anil Vullikanti, Samarth Swarup, Sifat Moon, Christopher Louis Barrett, Siva Athreya, Rajesh Sundaresan, Vijay Chandru, Ramanan Laxminarayan, Benjamin Schaffer, H. Vincent Poor, Simon A. Levin, and Madhav V. Marathe. *Coupled models of genomic surveillance and evolving pandemics with applications for timely public health interventions.* Accepted at Proceedings of the National Academy of Sciences (PNAS), 2023. (Impact factor 11.1)

2. Katharine Sherratt, Hugo Gruson, Rok Grah, Helen Johnson, Rene Niehus, Bastian Prasse, Frank Sandman, Jannik Deuschel,... , **Aniruddha Adiga**,... ,Johannes Bracher , Sebastian Funk, *Predictive performance of multi-model ensemble forecasts of COVID-19 across European nations.* Elife, 2023. (Impact factor 8.7)

3. Parantapa Bhattacharya, Jiangzhuo Chen, Stefan Hoops, Dustin Machi, Bryan Lewis, Srinivasan Venkatramanan, Mandy L Wilson, Brian Klahn, **Aniruddha Adiga**, Benjamin Hurt, and others. *Data-driven scalable pipeline using national agent-based models for real-time pandemic response and decision support,* in the International Journal of High Performance Computing Applications 37, 1 (2023), 4–27, 2023. (**Finalists - 2021 Gordon Bell Special Prize for HPC-Based COVID-19 Research**, Impact factor 2.8)

4. Rebecca K Borchering, Luke C Mullany, Emily Howerton, Matteo Chinazzi, Claire P Smith, Michelle Qin, Nicholas G Reich, ..., **Aniruddha Adiga**,..., Michael C. Runge, Cécile Viboud, Justin Lessler. 2023. Impact of SARS-CoV-2 vaccination of children ages 5–11 years on COVID-19 disease burden and resilience to new variants in the United States, November 2021–March 2022: A multi-model study. The Lancet Regional Health-Americas 17, 100398, 2023. (**COVID-19 Forecast/Scenario Hub**)

5. Zakaria Mehrab, **Aniruddha Adiga**, Madhav V Marathe, Srinivasan Venkatramanan, and Samarth Swarup, *Evaluating the utility of high-resolution proximity metrics in predicting the spread of COVID-19,* in ACM Transactions on Spatial Algorithms and Systems 8, 4, 1–51, 2022.

6. Shaun Truelove, Claire P Smith, Michelle Qin, Luke C Mullany, Rebecca K Borchering, Justin Lessler, Katriona Shea, Emily Howerton, Lucie Contamin, John Levander,..., **Aniruddha Adiga**,..., Michael C Runge, Cécile Viboud. 2022. Projected resurgence of COVID-19 in the United States

in July—December 2021 resulting from the increased transmissibility of the Delta variant and faltering vaccination. Elife 11, e73584, 2023. (**COVID-19 Forecast/Scenario Hub**, Impact factor 8.7)

7. Estee Y Cramer, Yuxin Huang, Yijin Wang, Evan L Ray, Matthew Cornell, Johannes Bracher, Andrea Brennen, Alvaro J Castro Rivadeneira, Aaron Gerding, Katie House, and others, *The united states covid-19 forecast hub dataset,* in Nature Scientific data 9, 1, 462, 2022. (**COVID-19 Forecast/Scenario Hub**, Impact factor 8.5)

8. Rebecca K Borchering, Cécile Viboud, Emily Howerton, Claire P Smith, Shaun Truelove, Michael C Runge, Nicholas G Reich, Lucie Contamin, John Levander, Jessica Salerno,...,**Aniruddha Adiga**,..., Katriona Shea, and Justin Lessler, *Modeling of future COVID-19 cases, hospitalizations, and deaths, by vaccination rates and nonpharmaceutical intervention scenarios—United States, April–September 2021,* in Morbidity and Mortality Weekly Report 70, 19, 719, 2021. (**COVID-19 Forecast/Scenario Hub**) (Impact factor 17+)

9. **Aniruddha Adiga**, Devdatt Dubhashi, Bryan Lewis, Madhav Marathe, Srinivasan Venkatramanan, and Anil Vullikanti, *Mathematical models for covid-19 pandemic: a comparative analysis,* in Journal of the Indian Institute of Science 100, 4, 793–807, 2020. (**100+ citations**)

10. **Aniruddha Adiga**, Jiangzhuo Chen, Madhav Marathe, Henning Mortveit, Srinivasan Venkatramanan, and Anil Vullikanti. *Data-driven modeling for different stages of pandemic response,* in Journal of the Indian Institute of Science 100, 4, 901–915, 2020.

11. Arun Venkitaraman, **Aniruddha Adiga**, and Chandra Sekhar Seelamantula, *Auditory-motivated Gammatone wavelet transform,* in Elsevier Signal Processing 94, , 608–619, 2014. (Impact factor 4.7)

12. Qutubuddin Saifee, Pushkar G Patwardhan, **Aniruddha Adiga**, and Vikram M Gadre, *Design of 3D nonseparable Mth band Eigenfilters with the 48-hedral symmetry,* in IETE Journal of Research 56, 3, 156–162, 2010.

Book Chapters

1. **Aniruddha Adiga**, Srinivasan Venkatramanan, Jiangzhuo Chen, Przemyslaw Porebski, Amanda Wilson, Henning Mortveit, Bryan Lewis, Justin Crow, Madhav V. Marathe, and NSSAC-BII team. *The Role of Artificial Intelligence in Epidemiological Modeling." In Artificial Intelligence for Science: A Deep Learning Revolution,* in World Scientific Publishing, pp. 355-377. 2023. (**Invited**)

2. Lijing Wang, **Aniruddha Adiga**, Jiangzhuo Chen, Bryan Lewis, Adam Sadilek, Srinivasan Venkatramanan, and Madhav Marathe, *Combining Theory and Data-Driven Approaches for Epidemic Forecasts,* in Knowledge-Guided Machine Learning. Chapman, 55–82, 2023. (**Invited**)

3. **Aniruddha Adiga**, Bryan Lewis, Simon Levin, Madhav V Marathe, H Vincent Poor, SS Ravi, Daniel J Rosenkrantz, Richard E Stearns, Srinivasan Venkatramanan, Anil Vullikanti, and Lijing Wang, *AI Techniques for Forecasting Epidemic Dynamics: Theory and Practice,* in Artificial Intelligence in Covid-19. Springer International Publishing Cham, 193–228, 2022. (**Invited**)

4. **Aniruddha Adiga**, *Sparsity Motivated Auditory Wavelet Representation and Blind Deconvolution,* 2018. (**PhD thesis**).

Workshops/Preprints

1. **Aniruddha Adiga**, Surbhi Singh, Ethan Choo, Johnny Yang, Srinivasan Venkatramanan, Anjana Devkota, Bharat Babu Shrestha, Seerjana Maharjan, Sita Gyawali, Sandeep Dhakal, Krishna Poudel, Pramod Kumar Jha, Rangaswamy Muniappan, Madhav Marathe, Abhijin Adiga, *A Robust Deep Learning Framework Reveals the Spread of Multiple Invasive Plants in a Biodiversity Hotspot using Satellite Imagery,* In the Workshop on Artificial Intelligence for Social Good (AI4SG 23) at AAAI 2023.

2. **Aniruddha Adiga**, Siva Athreya, Madhav Marathe, Jagadish Midthala, Nihesh Rathod, Rajesh Sundaresan, Srinivasan Venkataramanan, and Sarath Yasodharan, *Impact of Weeknight and Weekend Curfews Using Mobility Data: A Case Study of Bengaluru Urban,* in medRxiv (2022), 2022–01.

3. **Aniruddha Adiga**, Siva Athreya, Bryan Lewis, Madhav V Marathe, Nihesh Rathod, Rajesh Sundaresan, Samarth Swarup, Srinivasan Venkatramanan, and Sarath Yasodharan, *Strategies to Mitigate COVID-19 Resurgence Assuming Immunity Waning: A Study for Karnataka, India,* in MedRxiv, 2021.

4. Lijing Wang, Xue Ben, **Aniruddha Adiga**, Adam Sadilek, Ashish Tendulkar, Srinivasan Venkatramanan, Anil Vullikanti, Gaurav Aggarwal, Alok Talekar, Jiangzhuo Chen, Bryan Lewis, Samarth Swarup, Amol Kapoor, Milind Tambe and Madhav Marathe. *Using Mobility Data to Understand and Forecast COVID19 Dynamics,* in IJCAI 2021 Workshop on AI for Social Good, 2021.

5. **Aniruddha Adiga**, Lijing Wang, Adam Sadilek, Ashish Tendulkar, Srinivasan Venkatramanan, Anil Vullikanti, Gaurav Aggarwal, Alok Talekar, Xue Ben, Jiangzhuo Chen, and others, *Interplay of global multi-scale human mobility, social distancing, government interventions, and COVID-19 dynamics,* in medRxiv, 2020.

6. **Aniruddha Adiga**, Srinivasan Venkatramanan, James Schlitt, Akhil Peddireddy, Allan Dickerman, Andrei Bura, Andrew Warren, B Klahn, Chunhong Mao, Dawen Xie, and others, *Evaluating the impact of international airline suspensions on the early global spread of COVID-19,* in MedRxiv (2020).

7. Aritra Bhowmik, **Aniruddha Adiga**, Chandra Sekhar Seelamantula, Fabian Hauser, Jaroslaw Jacak, and Bettina Heise, *Bayesian Deep Deconvolutional Neural Networks,* in 2nd Neural Information Processing Systems (NeurIPS) Workshop Bayesian Deep Learning, 2017.

8. **Aniruddha Adiga**, Satish Mulleti, Prasad Sudhakar, and Chandra Sekhar Seelamantula, *Two-Dimensional FRI Signal Reconstruction Using Blind Deconvolution,* In Sampling Theory and Applications (SampTA) 2015

9. **Aniruddha Adiga** and Chandra Sekhar Seelamantula, *A Non-Convex Optimization Technique for Sparse Blind Deconvolution–Initialization Aspects and Error Reduction Properties.,* arXiv preprint arXiv:1708.07370 (2017).

Technical Reports (please refer `https://nssac.github.io/covid-19/vdh_weekly_briefings/`)