

Bijaya Adhikari
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WORK EXPERIENCE	Associate Professor Department of Computer Science The University of Iowa, Iowa City, IA	2026 - Present
	Assistant Professor Department of Computer Science The University of Iowa, Iowa City, IA	2020 - 2026
EDUCATION	Ph.D. , Computer Engineering Virginia Tech, Blacksburg, VA Advisor: Prof. B. Aditya Prakash	2015 - 2020
	M.S. , Computer Science (Along the way) Virginia Tech, Blacksburg, VA	2015 - 2019
	B. Eng. , Computer Engineering Vistula University, Warsaw, Poland	2011 - 2015
HONORS AND FELLOWSHIPS	• NSF CAREER award, 2025 • SIGKDD Outstanding (top 10%) reviewer, 2025 • Best student paper award runner-up, ASONAM 2022 • 8th Heidelberg Laureate Forum Young Researcher Attendee, 2021 • Second place in the C3.ai COVID-19 Grand Challenge, 2020 • First place in the COVID-19 Symptom Data Challenge, 2020 • Pratt Fellowship, Virginia Tech 2017, 2019 • KDD, SDM, ICDM, WWW Travel Awards, 2017-2019	
PUBLICATIONS	Refereed Journals and Conferences [My students in <u>underline</u>] 1. <u>Hieu Vu</u>, <u>Rares-Mihail Neagu</u> and Bijaya Adhikari. “Spectral Gap-Driven Coarsening for Dynamic Graph Neural Networks”. <i>KDD 2026</i> 2. <u>Akash Choudhuri</u> and Bijaya Adhikari. “Learning Robust Hypergraph Embeddings for Distribution-Free Uncertainty Quantification”. <i>KDD 2026</i> 3. <u>Suleman Baloch</u>, Kishlay Jha, Alberto M. Segre, Philip M. Polgreen, Bijaya Adhikari. “A Machine Learned Comorbidity Index”. <i>ICML 2026</i> 4. Jusung Ham, Ian Pope, Jinhee Kim, Hwan Shim, Bijaya Adhikari, Yu-Hsiang Wu, Kyogu Lee, Octav Chipara, Inyong Choi. “Linking Attentional Modulation to Auditory Attention Decoding”. <i>Trends in Hearing 2026</i>	

5. Shailesh Dahal, Ratri Mukherjee, Nicholas Mathews, **Bijaya Adhikari**, and Kishlay Jha. "Semantic Knowledge Guided Diffusion Model for Biomedical Ontology Definition Generation". *ICHI 2026*
6. Ian Pope, Jusung Ham, Inyong Choi, Yu-Hsiang Wu, **Bijaya Adhikari**, and Octav Chipara. "End-to-End EEG-Based Auditory Attention Decoding for Cochlear Implant Users". *ICHI 2026*
7. **Featured on ACM Showcase.** Jeffrey Keithley, Tinh Tran, Lucas Zach-Ryan, Hasib Hasibul, Brodie McCuen, Sriram Pemmaraju and **Bijaya Adhikari**. "Real-time Cohorting of Nursing Care Into Bubbles". *AAMAS 2026*
8. Akash Choudhuri, Yongjian Zhong and **Bijaya Adhikari**. "Implicit Hypergraph Neural Network". *Big Data 2025*
9. Jeffrey Keithley, Akash Choudhuri, **Bijaya Adhikari**, and Sriram Pemmaraju. "Analyzing Greedy Vaccine Allocation Algorithms for Metapopulation Disease Models". *PLoS Computational Biology 2025*
10. Hieu Vu, Alberto M. Segre, and **Bijaya Adhikari**. "TempoBiGen: A Curated Generative Model for Healthcare Mobility Logs with Visit Duration". *ECMLPKDD 2025*
11. Hieu Vu, Roger Struble, Philip M. Polgreen, **Bijaya Adhikari**, and Ted Herman. "Contact Observations from an Intensive Care Unit ". *Nature Scientific Data 2025*
12. Yongjian Zhong, Liao Zhu, Hieu Vu, and **Bijaya Adhikari**. "Implicit Subgraph Neural Network". *ICML 2025*
13. Akash Choudhuri, Hieu Vu, Kishlay Jha and **Bijaya Adhikari**. "Domain Knowledge Augmented Contrastive Learning on Dynamic Hypergraphs for Improved Health Risk Prediction". *SDM 2025*
14. Akash Choudhuri, Yongjian Zhong, Mehrdad Moharrami, Christine Klymko, Mark Heimann, Jayaraman Thiagarajan and **Bijaya Adhikari**. "Conformal Edge-Weight Prediction in Latent Space". *SDM 2025*
15. Jiaming Cui, **Bijaya Adhikari**, Arash Haddadan, A S M Ahsan-Ul Haque, Jilles Vreeken, Anil Vullikanti and B. Aditya Prakash. "Accurately Estimating Unreported Infections using Information Theory". *SDM 2025*
16. Yongjian Zhong, Hieu Vu, Tianbao Yang, and **Bijaya Adhikari**. "Efficient and Effective Implicit Dynamic Graph Neural Network". *SIGKDD 2024*
17. Aaron Miller, Alan Arakkal, Daniel Sewell, Alberto M. Segre, **Bijaya Adhikari**, and Philip M. Polgreen. "Hospitalizations Among Family Members Increase the Risk of MRSA Infection in a Household". *Infection Control and Epidemiology 2024*
18. Yongjian Zhong, Weiyu Huang and **Bijaya Adhikari**. "End-to-End Risk-aware Reinforcement Learning to Detect Asymptomatic Cases in Healthcare Facilities". *ICHI 2024*
19. Juncheng Ding, Shailesh Dahal, **Bijaya Adhikari** and Kishlay Jha. "Learning to Rank Complex Biomedical Hypotheses for Accelerating Scientific Discovery". *ICHI 2024*
20. Akash Choudhuri, Hankyu Jang, Alberto M. Segre, Philip M. Polgreen, Kishlay Jha and **Bijaya Adhikari**. "Continually-Adaptive Representation Learning Framework for Time-Sensitive Healthcare Applications". *CIKM 2023*
21. Pratik Maitra, Masahiro Kiji, Talal Riaz, Philip M. Polgreen, Alberto M. Segre, Sriram Pemmaraju and **Bijaya Adhikari**. "CAD2GRAPH: Automated Extraction of Spatial Graphs from Architectural Drawings". *ECML / PKDD 2023*

22. Sen Pei, Seth Blumberg, Jaime Cascante Vega, Tal Robin, Yue Zhang, Richard J. Medford, **Bijaya Adhikari**, and Jeffrey Shaman. “Challenges in Forecasting Antimicrobial Resistance”. *Emerging Infectious Diseases*, 2023
23. Hangkyu Jang, Andrew Fu, Jiaming Cui, Methun Kamruzzaman, B. Aditya Prakash, Anil Vullikanti, **Bijaya Adhikari** and Sriram Pemmaraju. “Detecting Sources of Healthcare Associated Infections”. *AAAI 2023*
24. Alexander Rodriguez, Jiaming Cui, Naren Ramakrishnan, **Bijaya Adhikari** and B. Aditya Prakash. “EINNs: Epidemiologically-Informed Neural Networks”. *AAAI 2023*
25. Masahiro Kiji, D.M. Hasibul Hasan, Alberto M. Segre, Sriram Pemmaraju, and **Bijaya Adhikari**. “Near-Optimal Spectral Disease Mitigation in Healthcare Facilities”. *ICDM 2022*
26. **Best Student Paper Runner-up**. Hankyu Jang, Sulyun Lee, D. M. Hasibul Hasan, Philip M. Polgreen, Sriram V. Pemmaraju and **Bijaya Adhikari**. “Dynamic Healthcare Embeddings for Improving Patient Care”. *ASONAM 2022*
27. Hankyu Jang, Shreyas Pai, **Bijaya Adhikari**, and Sriram V. Pemmaraju. “Risk-aware Temporal Cascade Reconstruction to Detect Asymptomatic Cases”. *KAIS 2022*
28. Estee Y Cramer, Evan L Ray et. al. “Evaluation of Individual and Ensemble Probabilistic Forecasts of COVID-19 Mortality in the United States ”. *PNAS 2022*
29. **Selected among ICDM best papers**. Hankyu Jang, Shreyas Pai, **Bijaya Adhikari**, and Sriram Pemmaraju. “Risk-aware Temporal Cascade Reconstruction to Detect Asymptomatic Cases”. *ICDM 2021*
30. D.M. Hasibul Hasan, Alex Rohwer, Hankyu Jang, Ted Herman, Philip M. Polgreen, Daniel K. Sewell, **Bijaya Adhikari**, and Sriram Pemmaraju. “Modeling and Evaluation of Clustering Patient Care into Bubbles”. *ICHI 2021*
31. Alexander Rodriguez, Nikhil Muralidhar, **Bijaya Adhikari**, Naren Ramakrishnan, and B. Aditya Prakash. “Steering a Historical Disease Forecasting Model Under a Pandemic: Case of Flu and COVID-19”. *AAAI 2021*
32. Alexander Rodriguez, Anika Tabassum, Jiaming Cui, Jajia Xie, Javen Ho, Pulak Agarwal, **Bijaya Adhikari** and B. Aditya Prakash. “DeepCOVID: An Operational DL-driven Framework for Explainable Real-time COVID-19 Forecasting”. *AAAI 2021*
33. **Bijaya Adhikari**, Liangyue Li, Nikhil Rao and Karthik Subbian. “Finding Needles in Heterogeneous Haystacks”. *AAAI 2021*
34. Alexander Rodriguez, **Bijaya Adhikari**, Andres D. Gonzalez, Charles Nicholson, Anil Vullikanti, and B. Aditya Prakash. “Mapping Network States using Connectivity Queries”. *BIGDATA 2020*
35. **Selected among AAMAS best papers**. Prathyush Sambaturu, **Bijaya Adhikari**, Bryan Lewis, B. Aditya Prakash, Srinivasan Venkatramanan, and Anil Vullikanti. “Designing Near-Optimal Temporal Interventions to Contain Epidemics”. *AAMAS 2020*
36. **Featured on the PLoS Complexity Channel**. **Bijaya Adhikari**, Bryan Lewis, Anil Vullikanti, Jose Mauricio Jimenez and B. Aditya Prakash. “Fast and Near-Optimal Monitoring for Healthcare Acquired Infection Outbreaks”. *PLoS Computational Biology 2019*
37. **Bijaya Adhikari**, Xinfeng Xu, Naren Ramakrishnan and B. Aditya Prakash. “EpiDeep: Exploiting Embeddings for Epidemic Forecasting”. *KDD 2019*

38. Sorour E. Amiri, **Bijaya Adhikari**, Aditya Bharadwaj, and B. Aditya Prakash. “NetGist: Learning to generate task-based network summaries”. *ICDM 2018*
39. Mohammad R Islam, Sathappan Muthiah, **Bijaya Adhikari**, B. Aditya Prakash, and Naren Ramakrishnan. “DeepDiffuse: Predicting the ‘Who’ and ‘When’ in Cascades”. *ICDM 2018*
40. **Bijaya Adhikari**, Yao Zhang, Naren Ramakrishnan, and B. Aditya Prakash. “Sub2Vec: Feature Learning for Subgraphs”. *PAKDD 2018*
41. **Bijaya Adhikari**, Parikshit Sondhi, Wenke Zhang, Mohit Sharma, and B. Aditya Prakash. “Mining E-Commerce Query Relations using Customer Interaction Networks”. *WWW 2018*
42. **Bijaya Adhikari**, Pavan Rangudu, B. Aditya Prakash, and Anil Vullikanti. “Near-Optimal Mapping of Network States using Probes”. *SDM 2018*
43. **Bijaya Adhikari**, Yao Zhang, Sorour E. Amiri, Aditya Bharadwaj, and B. Aditya Prakash. “Propagation based Temporal Network Summarization”. *TKDE 2018*
44. Yao Zhang, **Bijaya Adhikari**, Steve Jan, and B. Aditya Prakash. “MeiKe: Influence-based Communities in Networks”. *SDM 2017*
45. **Bijaya Adhikari**, Yao Zhang, Aditya Bharadwaj, and B. Aditya Prakash. “Condensing Temporal Networks using Propagation”. *SDM 2017*
46. Stanislaw Placzek and **Bijaya Adhikari**. “Analysis of MultiLayer Neural Networks with Direct and Cross Forward Connection”. *Fundamenta Informaticae 2014*
47. Stanislaw Placzek and **Bijaya Adhikari**. “Coordination Algorithm in Hierarchical Structure of the Learning Process of Artificial Neural Network”. *CS&P 2014*

**Grants and
Contracts**

NACCHO	2026 - 2026
<i>EMERGING INFECTIONS NETWORK - Iowa</i>	
Role: Co-I, Award amount: 375K.	
NSF CAREER	2025 - 2030
<i>CAREER: Online Algorithms for Real-time Interventions against Healthcare Associated Infections</i>	
Role: Sole PI, Award amount: 600K.	
NSF SmartHealth	2023 - 2027
<i>SCH: Shallow and Deep Personalization for Hearing Aids</i>	
Role: Co-PI, Award amount: 1.2M.	
NSF CyberTraining	2023 - 2026
<i>Collaborative Research: CyberTraining: Implementation: Small: Inclusive Cyberinfrastructure and Machine Learning Training to Advance Water Science Research</i>	
Role: Site-PI, Award amount: 500K.	
P3/Jumpstarting Tomorrow	2022 - 2023
<i>Ensuring Equity in Spatio-Temporal Disease Surveillance</i>	
Role: PI, Award amount: 25K.	

UIowa OVPR Interdisciplinary Scholars Grant 2022 - 2023
Understanding the Potential Adverse Health Effects Attributable to the CF Carrier State
 Role: Co-I, Award amount: 220K.

CDC Modeling Infectious Disease Network. 2020 - 2022
Covid-19 Supplemental Funding
 Role: Co-I, Award amount: 1.2M.

STUDENT MENTORING

PHD Advisees

- Jeffery Kiethley, (co-advising with Pemmaraju), Expected Graduation: 2026
- Akash Choudhuri, Expected Graduation: 2026
- Yongjian Zhong, Expected Graduation: 2026
- Hieu Vu, Expected Graduation: 2027
- Mihail Neagu, Expected Graduation: 2030
- Suleman Baloch, Expected Graduation: 2030
- Yijie Zhang, Expected Graduation: 2031

MCS Advisees

- Pratik Maitra, Graduation year: 2023
- Lucas Zach Ryan, Graduation year: 2023
- Weiyu Zhang, Graduation year: 2023
- D. M. Hasibul Hasan, Graduation year: 2022
- Masahiro Kiji, Graduation year: 2022

Undergraduate Research Advisees

- Liao Zhu, Graduation year: 2025
- Tinh Tran, Graduation year: 2024

Summer Research Advisees

- Jonathan Wang, Grinnell College, 2025, REU
- Adam Sayyed, University of Maryland Baltimore County, 2024, UIOWA SROP
- Mulan Liu, University of Wisconsin-Madison, 2023, REU
- Vivian Nguyen, University of Nebraska-Lincoln, 2022, REU
- Brodie McCuen, Cornell College, 2021, REU
- McKenna Huse, Coe College, 2021, REU

TEACHING

CS 3330 Algorithms	Fall 2026
CS 4980 Computational Epidemiology	Spring 2026
CS 3330 Algorithms	Fall 2025
CS 3330 Algorithms	Fall 2024
CS 3330 Algorithms	Spring 2024
CS 4420 Artificial Intelligence	Fall 2023
CS 4980 Computational Epidemiology	Spring 2022
CS 4420 Artificial Intelligence	Fall 2022
CS 4420 Artificial Intelligence	Spring 2022
CS 3330 Algorithms	Spring 2021

At Virginia Tech

Instructor for Data Analytics (CS 5525)

Spring 2020

Instructor of record for CS 5525. It is a graduate course with 20 students currently enrolled. Roles included giving 2 hours 30 minutes lectures each week, guiding GTAs with grading, project design, and so on.

SERVICES

Organizing Committee

SIAM SDM Doctoral Forum Co-chair 2026

IEEE BIGDATA Vice Co-Chair of Big Data Search and Mining 2024

epiDAMIK workshop 2018-2026

SPC Member

AAAI 2023-2026

WWW 2025-2026

PC Member

DeMal 2021

SDM 2019- 2024

BigData 2020, 2021

AAAI 2021, 2022

IJCAI 2021-2026

WSDM 2021-2023

ECML/PKDD 2023-2025

CIKM 2023-2024

PAKDD 2024-2026

ASONAM 2024-2025

KDD 2022-2026

Journal Reviewing (Multiple Times): TKDE, PLoS ONE, PLoS Computational Biology, TKDD, NeuroComputing

Grant Reviewing: NSF, NIH, DOE, Deutsche Forschungsgemeinschaft

Member: SIAM, IEEE, ACM