CURRICULUM VITAE

Bijaya Adhikari

Computer Science

August 2015 – October 2021

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Education and Professional History

Higher Education

2020 **Phd**, Computer Science, Virginia Tech
Thesis: Domain-based Frameworks and Embeddings for Dynamics over Networks

2019 **M.S.** (Along the way), Computer Science, Virginia Tech

2015 **BEng**, Computer Engineering, Vistula University

Professional and Academic Positions

2020 – present **Assistant Professor**, Department of Computer Science, The University of Iowa

2015 – 2020 **Graduate Research/Teaching Assistant**, Department of Computer Science, Virginia Tech

2019 – 2019 **Applied Scientist Intern**, Amazon

2017 – 2017 **Data Science Intern**, Walmart

Honors and Awards

2021 **Heidelberg Laurate Forum Young Researcher Attendee**, Heidelberg Laurate Forum Foundation
2020 **Second Place Winner - C3.ai COVID-19 Grand Challenge**, C3.ai
2020 **First Place Winner - COVID-19 Symptom Data Challenge**, Facebook and Catalyst@Health
2019 **Pratt Supplemental Fellowship**, Computer Science Department, Virginia Tech
2019 **KDD Travel Award**, SIGKDD 2019
2019 **SDM Doctoral Forum Travel Award**, SDM 2019
2018 **ICDM Travel Award**, ICDM 2018
2019 **ICDM Travel Award**, ICDM 2017
2017 **Appreciation Bonus**, Computer Science Department, Virginia Tech

Memberships

2019 – present ACM
2016 – present SIAM
2017 – present IEEE

Teaching

Courses Taught at the University of Iowa

Term	Course #	Title	Ten-day Enroll.	Final Enroll.
Fall 2020	CS:4980:0004	Mining and Learning on Large Networks	12	10
Spring 2021	CS:3330:0002	Algorithms	62	54

Additional Courses Taught (at Virginia Tech)

Term	Course #	Title	Ten-day Enroll.	Final Enroll.
Spring 2020	CS 5525	Data Analytics 1	25	20

Student Mentoring Summary

Fall 2020 – Present	PhD Advisor, # Students: 3 [2 as a co-advisor]
Fall 2020 – Present	MCS Advisor, # Students: 1
Summer 2021 – Summer 2021	REU Mentor, # Students: 2 [both as a co-advisor]
Summer 2021 – Summer 2021	PhD Committee Member, # Students: 2

Student Mentoring

MCS — Advisor

@Aug 2020 – May 2022 Kiji, Masahiro

PhD — Advisor

Aug 2020 – Present	Hasan, DM Hasibul [Co-advising with Sriram Pemmaraju]
Aug 2021 – Present	Aites, Linden David
Aug 2020 – Present	Keithly, Jeffery [Co-advising with Sriram Pemmaraju]

PhD — Committee Member

Aug 2020 – July 2021	**Longitudinal Time-To-Event Graph Mining Pipeline for Muskoskeletal Injury Forecasting**, Peterson, Kyle Donald
Aug 2020 – Apr 2021	**On The Role of Congestion in Distributed Complexity**, Pai, Shreyas

Qualifying Exam — Committee Member

Sep 2020 – Sep 2020	Hammas, Bin Tanveer
Mar 2021 – May 2021	Bao, Han; [GeoInformatics Department]
Sep 2021 – Sep 2021	Hubers, Alexandar;

Comprehensive Exam — Committee Member

May 2021	**Healthcare-Associated Infections - Computational Modeling and Inference**, Jang, Hankyu
May 2021	**Interpretable Sequence Classification Via Prototype Trajectory**, Hong, Dat
Nov 2020	**Comprehensive Literature Review on Network Embedding**, Lee, Sulyun

NSF REU — Mentor

June 2021 - Aug 2021	**Online Bubble Clustering for Hospital Infection Control**, McCuen, Brodie
June 2021 - Aug 2021	**Modeling Contact Networks in Hospitals for Infection Control**, Huse, McKenna

Scholarship

Publications

Refereed Articles

[1] B. Adhikari, L. Li, N. Rao, and K. Subbian, "Finding needles in heterogeneous haystacks," in *Proceedings of the AAAI Conference on Artificial Intelligence*, vol. 35, 2021, pp. 15 232–15 239.

[2] D. Hasan, A. Rohwer, H. Jang, T. Herman, P. M. Polgreen, D. K. Sewell, B. Adhikari, and S. V. Pemmaraju, "Modeling and evaluation of clustering patient care into bubbles," in *9th IEEE International Conference on Healthcare Informatics*, 2021.

[3] H. Jang, S. Pai, B. Adhikari, and S. Pemmaraju, "Risk-aware temporal cascade reconstruction to detect asymptomatic cases," in *2021 IEEE International Conference on Data Mining (ICDM)*, IEEE, 2021.

[4] A. Rodriguez, N. Muralidhar, B. Adhikari, A. Tabassum, N. Ramakrishnan, and B. A. Prakash, "Steering a historical disease forecasting model under a pandemic: Case of flu and covid-19," in *Proceedings of AAAI*, 2021.

[5] A. Rodriguez, A. Tabassum, J. Cui, J. Xie, J. Ho, P. Agarwal, B. Adhikari, and B. A. Prakash, "Deepcovid: An operational deep learning-driven framework for explainable real-time covid-19 forecasting," in *Proceedings of the AAAI Conference on Artificial Intelligence*, vol. 35, 2021, pp. 15 393–15 400.

[6] A. Rodriguez, B. Adhikari, A. D. Gonzalez, C. Nicholson, A. Vullikanti, and B. A. Prakash, "Mapping network states using connectivity queries," in *2020 IEEE International Conference on Big Data (Big Data)*, IEEE, 2020, pp. 778–787.

[7] P. Sambaturu, B. Adhikari, B. A. Prakash, S. Venkatramanan, and A. Vullikanti, "Designing effective and practical interventions to contain epidemics," in *Proceedings of the 19th International Conference on Autonomous Agents and MultiAgent Systems*, 2020, pp. 1187–1195.

[8] B. Adhikari, B. Lewis, A. Vullikanti, J. M. Jiménez, and B. A. Prakash, "Fast and near-optimal monitoring for healthcare acquired infection outbreaks," *PLoS computational biology*, vol. 15, no. 9, 2019.

[9] B. Adhikari, X. Xu, N. Ramakrishnan, and B. A. Prakash, "Epideep: Exploiting embeddings for epidemic forecasting," in *Proceedings of the 25th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining*, 2019, pp. 577–586.

[10] B. Adhikari, P. Rangudu, B. A. Prakash, and A. Vullikanti, "Near-optimal mapping of network states using probes," in *Proceedings of the 2018 SIAM International Conference on Data Mining*, SIAM, 2018, pp. 108–116.

[11] B. Adhikari, P. Sondhi, W. Zhang, M. Sharma, and B. A. Prakash, "Mining e-commerce query relations using customer interaction networks," in *Proceedings of the 2018 World Wide Web Conference*, 2018, pp. 1805–1814.

[12] B. Adhikari, Y. Zhang, N. Ramakrishnan, and B. A. Prakash, "Sub2vec: Feature learning for subgraphs," in *Pacific-Asia Conference on Knowledge Discovery and Data Mining*, Springer, 2018, pp. 170–182.

[13] S. E. Amiri, B. Adhikari, A. Bharadwaj, and B. A. Prakash, "Netgist: Learning to generate task-based network summaries," in *2018 IEEE International Conference on Data Mining (ICDM)*, IEEE, 2018, pp. 857–862.

[14] M. R. Islam, S. Muthiah, B. Adhikari, B. A. Prakash, and N. Ramakrishnan, "Deepdiffuse: Predicting the'who'and'when'in cascades," in *2018 IEEE International Conference on Data Mining (ICDM)*, IEEE, 2018, pp. 1055–1060.

[15] B. Adhikari, Y. Zhang, S. E. Amiri, A. Bharadwaj, and B. A. Prakash, "Propagation-based temporal network summarization," *IEEE Transactions on Knowledge and Data Engineering*, vol. 30, no. 4, pp. 729–742, 2017.

[16] B. Adhikari, Y. Zhang, A. Bharadwaj, and B. A. Prakash, "Condensing temporal networks using propagation," in *Proceedings of the 2017 SIAM International Conference on Data Mining*, SIAM, 2017, pp. 417–425.

[17] B. Adhikari, Y. Zhang, N. Ramakrishnan, and B. A. Prakash, "Distributed representations of subgraphs," in *2017 IEEE International Conference on Data Mining Workshops (ICDMW)*, IEEE, 2017, pp. 111–117.

[18] Y. Zhang, B. Adhikari, S. T. Jan, and B. A. Prakash, "Meike: Influence-based communities in networks," in *Proceedings of the 2017 SIAM International Conference on Data Mining*, SIAM, 2017, pp. 318–326.

[19] S. Placzek and B. Adhikari, "Coordination algorithm in hierarchical structure of the learning process of artificial neural network," *CS&P*, 2014.

[20] S. Placzek and B. Adhikari, "Analysis of multilayer neural networks with direct and cross forward connection," *Fundamenta Informaticae*, vol. 133, no. 2-3, pp. 227–240, 2014.

Non-Refereed Articles

[1] E. Y. Cramer, V. K. Lopez, J. Niemi, G. E. George, J. C. Cegan, I. D. Dettwiller, W. P. England, M. W. Farthing, R. H. Hunter, B. Lafferty, *et al.*, "Evaluation of individual and ensemble probabilistic forecasts of covid-19 mortality in the us," *medRxiv*, 2021.

Refereed Electronic Publications

[1] S. E. Amiri, B. Adhikari, J. Wenskovitch, A. Rodriguez, M. Dowling, C. North, and B. A. Prakash, "Netreact: Interactive learning for network summarization," in *NeurIPS 2020 Workshop on Human And Model in the Loop Evaluation and Training Strategies*, 2020.

[2] A. Rodriguez, B. Adhikari, N. Ramakrishnan, and B. A. Prakash, "Incorporating expert guidance in epidemic forecasting," 2020.

[3] P. Rangudu, B. Adhikari, B. A. Prakash, and A. Vullikanti, "Using partial probes to infer network states," in *13th International Workshop on Mining and Learning with Graphs. MLG*, 2017.

Areas of Research Interest

Data Mining, Machine Learning

Large Networks, Propagation over Networks

Computational Epidemiology, Modelling Infectious Diseases

Invited Lectures and Conference Presentations

National — Colloquia

Nov 2021	[GSS Colloqium] *Mining and Optimizing Mobility to Control Infection Spread*, [Geographical and Sustainability Department, University of Iowa] Iowa City, Iowa (Upcoming)
Nov 2021	[ECE Graduate Seminar] *Mining and Optimizing Mobility to Control Infection Spread*, [Department of Electrical and Computer Engineering, University of Iowa] Iowa City, Iowa (Upcoming)
Oct @Year	[Seminar in BioStat] *Mining and Optimizing Mobility to Control Infection Spread*, [Department of BioStatistics] Iowa City, Iowa (Upcoming)

National — Invited Talks

June 2021	[CDC MInD Virtual Grantee Meeting] *Dynamic Healthcare Embeddings for Improved Patient-Care*, [CDC] Virtual
July 2018	[Invited talk] *Leveraging Graph Mining for E-Commerce*, [WalmartLabs] Virtual
March 2018	[Class Lecture] *Inference of Missing Infections*, [Virginia Tech] Blacksburg
Oct 2015	[Class Lecture] *Non-overlapping Community Detection*, [Virginia Tech] Blacksburg

National — Conference Presentations

Feb 2021	IAAI 2021, *Finding Needles in Heterogeneous Haystack*, Virtual.
Aug 2019	SIGKDD 2019, *EpiDeep: Exploiting Embeddings for Epidemic Forecasting,*, Anchorage, Alaska.
@Nov 2018	ICDM 2018, *Learning to generate network summaries,*, Singapore.
June 2018	PAKDD 2018, *Sub2Vec: Feature Learning for Subgraphs*, Melbourne, Australia.
May 2018	SDM 2018, *Near-optimal Mapping of Network States using Probes,*, San Diego, California.
May 2018	WWW 2018, *Mining E-Commerce Query Relations using CINs*, Lyon, France.
Nov 2017	ICDMW MLG 2017, *Distributed Representations of Subgraphs*, New Orleans, Louisiana.
April 2017	SDM 2017, *Condensing Temporal Networks using Propagation*, Houston, Texas.

Service

Profession

Review Editor

2021 – Present Frontiers in Big Data

Program Committee Member

2022 AAAI (Upcoming)
2021 IJCAI (Upcoming)
2021 BigData (Upcoming)
2021 WSDM Demo Track (Upcoming)
2021 AAAI
2021 IJCAI
2021 SDM
2021 DeMal
2020 SDM
2020 BigData
2019 SDM

Co-Organizer

2021 epiDAMIK 4.0: The 4th International workshop on Epidemiology meets Data Mining and Knowledge discovery (lead orgnizer)
2020 epiDAMIK 3.0: The 3rd International workshop on Epidemiology meets Data Mining and Knowledge discovery
2019 epiDAMIK 2.0: The 2nd International workshop on Epidemiology meets Data Mining and Knowledge discovery (as Web-Master)
2018 epiDAMIK: The International workshop on Epidemiology meets Data Mining and Knowledge discovery (as Web-Master)

Journal Reviewer

TKDE (multiple times)
TKDD (multiple times)
PLoS One (multiple times)
PLoS Computational Biology (multiple times)
DAMI (multiple times)