Nikhil Muralidhar

Assistant Professor
Department of Computer Science, Stevens Institute of Technology
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Work Experience

- **Assistant Professor, Dept. of Computer Science** — Hoboken, NJ
  Stevens Institute of Technology — *Sept. 2022 - present*

Education

- **Ph.D Computer Science** — Arlington, VA
  Virginia Tech — *2016 - 2022*
  - **Thesis:** Science-Guided Machine Learning: Incorporating Domain Knowledge for Learning Under Data Paucity & Noisy Data.
  - **Advisors**: Prof. Naren Ramakrishnan, Prof. Anuj Karpatne
  - **Honor:** Nominee for **College of Engineering Outstanding Doctoral Student** by Computer Science Department, Virginia Tech
  - **Honor:** Nominee for **Outstanding Doctoral Dissertation Award** by Computer Science Department, Virginia Tech
- **M.S Computer Science** — Fairfax, VA
  George Mason University — *2013 - 2015*
  - **Thesis:** Recommending Temporally Relevant News Content From Implicit Feedback Data: A Tag Based Approach
  - **Advisor**: Prof. Huzefa Rangwala
  - **Honor: Outstanding Academic Achievement Award** Computer Science Department, George Mason University
- **B.S Computer Science** — Blacksburg, VA
  Virginia Tech — *2008 - 2012*

Research Experience

- **Graduate Research Assistant** — Arlington, VA
  Sanghani Center, Virginia Tech — *August 2016 - 2022*
- **Applied Machine Learning Fellowship** — Los-Alamos, NM
  Los-Alamos National Laboratory — *June 2021 - August 2021*
- **Research Intern (Intelligent Energy Management)** — Cupertino, CA
  NEC Laboratories America Inc. — *May 2017 - August 2017*
- **Graduate Research Assistant** — Fairfax, VA
  George Mason University — *November 2013 - December 2015*

Research Interests

Scientific & Science-Guided Machine Learning; Spatio-temporal Machine Learning; ML Under Data Paucity & Noise; Multivariate Time-Series Forecasting & Anomaly Detection; Meta-Learning, Transfer Learning; Domain Generalization.

Teaching

- **Instructor for (CS 810-E) Introduction to ML for Scientific Discovery** Spring 2026
  Stevens Institute of Technology *Hoboken, NJ*
- **Instructor for (CS-556) Mathematical Foundations of Machine Learning** Spring 2026
  Stevens Institute of Technology *Hoboken, NJ*
- **Instructor for (CS-556) Mathematical Foundations of Machine Learning** Spring 2025
  Stevens Institute of Technology *Hoboken, NJ*
- **Instructor for (CS-556) Mathematical Foundations of Machine Learning** Fall 2024
  Stevens Institute of Technology *Hoboken, NJ*
- **Instructor for (CS-556) Mathematical Foundations of Machine Learning** Spring 2024
  Stevens Institute of Technology *Hoboken, NJ*
- **Instructor for (CS-556) Mathematical Foundations of Machine Learning** Fall 2023
  Stevens Institute of Technology *Hoboken, NJ*
- **Instructor for (CS-556) Mathematical Foundations of Machine Learning** Spring 2023
  Stevens Institute of Technology *Hoboken, NJ*
- **Instructor for (CS-556) Mathematical Foundations of Machine Learning** Fall 2022
  Stevens Institute of Technology *Hoboken, NJ*

Mentoring

- **Shital Adhikari (Ph.D Student)** Hoboken, NJ
  Stevens Institute of Technology (Ph.D. Student in CS) *Sept. 2024 - present*
- **Reihaneh Roshan (Ph.D Student)** Hoboken, NJ
  Stevens Institute of Technology (Ph.D. Student in CS) *September 2023 - present*
- **Bharath Srikishan (Ph.D Student)** Hoboken, NJ
  Stevens Institute of Technology (Ph.D. Student in CS) *November 2022 - present*
- **Nilay Anurag (M.S. Thesis)** Hoboken, NJ
  Thesis: *Improving Prediction Performance in Physics-Informed Machine Learning through Intelligent Initialization and Adaptation* *Sept. 2022 - Dec. 2024*

- **Ali El Sayed (M.S. Thesis)** Hoboken, NJ
  Thesis: *LLM-Modulo Techniques to Improve eCommerce Search Ranking* *Jan. 2024 - May 2025*

Industry Experience

- **Data Scientist** Washington D.C.
  Big Data & Personalization Team, The Washington Post *September 2014 - May 2016*

Awards & Honors

(Nominated by CS Dept.) VT Grad. School **Outstanding Doctoral Dissertation Award** 2023
(Nominated by CS Dept.) VT College of Engg. **Outstanding Doctoral Student Award** . 2022
SIAM International Conference on Data Mining (SDM21) Travel Award 2021
Applied ML Summer Research Fellowship Los-Alamos Nat. Lab - (7.5% Acceptance Rate) . 2021
Expert Reviewer (International Conf. on Machine Learning) 2021
First place: COVID-19 Symptom Data Challenge organized by Catalyst Health & Facebook 2020
Second Place: C3.ai COVID-19 Grand Challenge 2020
Top 33% Ranking Reviewer Appreciation (International Conf. on Machine Learning) 2020
Invited Member of $\tau\,\beta\,\pi$ Honor Society (Virginia Tech Chapter) 2020-present
Invited Member of Golden Key International Honor Society 2017-present
Invited Life Member of $\Phi K \Phi$ Honor Society (Virginia Tech Chapter) 2017-present
National Science Foundation **Urban Computing Fellowship** 2016-2018
Outstanding Academic Achievement Award - CS Dept., George Mason University . . . 2015

Grants

- **eBay (PI)** $5000
  Stevens Institute of Artificial Intelligence (SIAI) *June 2023 - August 2023*

- **AI Summer Fellowship to Model ILI / Covid-19 (PI)** $5000
  Stevens Institute of Artificial Intelligence (SIAI) *June 2023 - August 2023*

Journal Publications

1. Faysal, A., Boushine, T., Rostami, M., Roshan Gh. R., Wang, H., & **Muralidhar, N.** DenoMAE: A Multimodal Autoencoder for Denoising Modulation Signals. In IEEE Communications Letters, vol. 29, no. 7, pp. 1659-1663, July 2025, doi: 10.1109/LCOMM.2025.3570602. (**Impact Factor: 4.4**)

2. Raj, N. A., Tafti, D., Cao, Z., & **Muralidhar, N.** (2025). Learning and interpreting drag force models for dense particle suspensions using graph neural networks. Powder Technology, 121278. (**Impact Factor: 4.6**)

3. Xu, S., Thomas, C. K., Hashash, O., **Muralidhar, N.**, Saad, W., & Ramakrishnan, N. (2024). Large multi-modal models (LMMs) as universal foundation models for AI-native wireless systems. IEEE Network. (**Impact Factor: 6.3**)

4. Raj, N. A., Tafti, D., **Muralidhar N.**, Cao Z. Physics informed deep learning for flow and force predictions in dense ellipsoidal particle suspensions. Powder Technology. 2024 Mar 24:119684. (**Impact Factor: 4.6**)

5. Mathis, S. M., Webber, A. E., León, T. M., Murray, E. L., Sun, M., White, L. A., et al. (2024). Evaluation of FluSight influenza forecasting in the 2021–22 and 2022–23 seasons with a new target laboratory-confirmed influenza hospitalizations. Nature communications, 15(1), 6289. (**Impact Factor: 14.7**)

6. Raj, N. A., Tafti, D., & **Muralidhar, N.** (2023). Comparison of reduced order models based on dynamic mode decomposition and deep learning for predicting chaotic flow in a random arrangement of cylinders. Physics of Fluids, 35(7). (**Impact Factor: 4.6**)

7. Ashwin NR, Cao Z, **Muralidhar N**, Tafti D, & Karpatne A. Deep learning methods for predicting fluid forces in dense particle suspensions. Powder Technology. 2022 Mar 23:117303. **(Impact Factor: 5.134)**

8. **Muralidhar, N**., Bu, J., Cao, Z., He, L., Ramakrishnan, N., Tafti, D., & Karpatne, A. (2020). *Physics-Guided Deep Learning for Drag Force Prediction in Dense Fluid-Particulate Systems.* Big Data, 8(5), 431-449.**(Impact Factor: 2.128)**

9. **Muralidhar, N.**, Tabassum, A., Chen, L., Chinthavali, S., Ramakrishnan, N., & Prakash, B. A. (2020). *Cut-n-Reveal: Time Series Segmentations with Explanations.* ACM Transactions on Intelligent Systems and Technology (TIST), 11(5), 1-26. **(Impact Factor: 4.654)**

10. **Muralidhar, N.**, Wang, C., Self, N., Momtazpour, M., Nakayama, K., Sharma, R., & Ramakrishnan, N. (2018). *illiad: InteLLigent Invariant and Anomaly Detection in Cyber-Physical Systems.* ACM Transactions on Intelligent Systems and Technology (TIST), 9(3), 35. **(Impact Factor: 4.654)**

Peer-Reviewed Conference Publications

11. Javaji, S. R., Cao, Y., Li, H., Yu, Y., **Muralidhar, N.**, & Zhu, Z. (2025). Can AI Validate Science? Benchmarking LLMs for Accurate Scientific Claim → Evidence Reasoning. arXiv preprint arXiv:2506.08235.

12. Rostami, M., Faysal, A., Roshan, R. G., Wang, H., **Muralidhar, N.**, & Yao, Y. D. (2025). Plug-and-Play AMC: Context Is King in Training-Free, Open-Set Modulation with LLMs. In 2025 34th Wireless and Optical Communications Conference (WOCC). IEEE. (**Charles Kao Best Paper Award**)

13. Srikishan, B., O'Malley, D., Mehana, M., Lubbers, Nicholas., & **Muralidhar, Nikhil** (2025). Model-Agnostic Knowledge Guided Correction for Improved Neural Surrogate Rollout. In Proceedings of the 2025 International Conference on Knowledge Representation (ICLR). **(Acceptance Rate: 32.08%)**

14. Tabassum, A., Allu, S., Kannan, R., & **Muralidhar, N.** (2024, December). Counter Data Paucity through Adversarial Invariance Encoding: A Case Study on Modeling Battery Thermal Runaway. In 2024 IEEE International Conference on Big Data (BigData) (pp. 2224-2233). IEEE. (**Acceptance Rate: 18.4%**)

15. Faysal, A., Rostami, M., Roshan, R. G., Wang, H., & **Muralidhar, N.** (2024, October). Nmformer: A transformer for noisy modulation classification in wireless communication. In 2024 33rd Wireless and Optical Communications Conference (WOCC) (pp. 103-108). IEEE.

16. Sharma, M., **Muralidhar, N.**, Xu, S., Yousuf, R. B., & Ramakrishnan, N. Information Guided Regularization for Fine-tuning Language Models. In the Proceedings of the First Conference on Language Modeling (COLM). October 2024. (**Acceptance Rate: 28.86%**)

17. Sharma, M., Taware, R. M., Koirala, P., **Muralidhar, N.**, & Ramakrishnan, N. (2024). Laying Anchors: Semantically Priming Numerals in Language Modeling. (arXiv preprint arXiv:2404.01536) In Proceedings of the 2024 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies. **(Acceptance Rate: 23.2%)**

18. Srikishan, B., Tabassum, A., Allu, S., Kannan, R., & **Muralidhar, N.** (2024). Reinforcement Learning as a Parsimonious Alternative to Prediction Cascades: A Case Study on Image Segmentation. Proceedings of the AAAI Conference on Artificial Intelligence, 38(13), 15066-15074. **(Acceptance Rate 23.75%)**.

19. Abhinav, P., Arunachalam, P., Motamedi, A., Bhattacharya, R., Liu, B., Mccormick, H., Xu, S., **Muralidhar, N.**, & Ramakrishnan, N., ML-assisted Optimization of Securities Lending. In Proceedings of the Fourth ACM International Conference on AI in Finance, pp. 628-636. 2023. **(Acceptance Rate 40%)**.

20. Sharma, M., **Muralidhar, N**., & Ramakrishnan, N. (2023). Learning Non-linguistic Skills without Sacrificing Linguistic Proficiency. Proceedings of the 61st Annual Meeting of the Association for Computational Linguistics (ACL) 2023 (Main Track: **Acceptance Rate: 23.5%**).

21. Ashwin, NR., Tafti, D., **Muralidhar, N.**, & Karpatne, A. (2022). Comparative Study of Future State Predictions of Unsteady Multiphase Flows using DMD and Deep Learning. In 9th International and 49th National Conference on Fluid Mechanics and Fluid Power (FMFP2022), Roorkee, India.

22. Tabassum, A., **Muralidhar, N.**, Kannan, R., & Allu, S. MatPhase: Material phase prediction for Li-ion battery Reconstruction using Hierarchical Curriculum Learning. In 2022 IEEE International Conference on Big Data (IEEE Big Data). (Short Paper) IEEE. - **(Short Paper Acceptance Rate 18.6%)**

23. Rathinavel, G., **Muralidhar, N**., O'Shea, T., & Ramakrishnan, N., Efficient Generative Wireless Anomaly Detection for Next Generation Networks. In MILCOM 2022-2022 IEEE Military Communications Conference (MILCOM) 2022 Nov 28. IEEE. (**Acceptance Rate 49%**)

24. Rathinavel, G., **Muralidhar, N**., O'Shea, T., & Ramakrishnan, N., Detecting Irregular Network Activity with Adversarial Learning & Expert Feedback . In Proceedings of the 22^{nd} IEEE International Conference on Data Mining (ICDM), IEEE, 2022. (**Acceptance Rate 20%**)

25. **Muralidhar, N**., Bu, J., Cao, Z., Raj, N., Ramakrishnan, N., Tafti, D., & Karpatne, A., "Phyflow: Physics-guided deep learning for generating interpretable 3D flow fields". In Proceedings of the 21^{st} IEEE International Conference on Data Mining (ICDM), IEEE, 2021. (**Acceptance Rate 20%**)

26. **Muralidhar, N.**, Zubair, A., Weidler, N., Gerdes, R., & Ramakrishnan, N. Contrastive Graph Convolutional Networks for Hardware Trojan Detection in Third Party IP Cores. In Proceedings of the 14^{th} IEEE International Symposium on Hardware-Oriented Security and Trust (IEEE HOST) 2021.

27. Rodriguez, A.*,**Muralidhar, N.***, Adhikari, B., Tabassum, A., Ramakrishnan, N., & Prakash B.A. Steering a Historical Disease Forecasting Model Under a Pandemic: Case of Flu and COVID-19. In Proceedings of the 35^{th} International Conference on Artificial Intelligence (AAAI) 2021 (https://arxiv.org/abs/2009.11407) - **(Acceptance Rate 21%)**.

28. Danielson, T. L., Pike J. A., Whiteside T., Mayer B., **Muralidhar N.**, Self N., & Butler P. Machine Learning Using Open Data Sources for Detection of Nuclear Proliferation Activities (U). Aiken, SC : Savannah River National Laboratory, SRNL-STI-2021-00047. January 2021.

29. **Muralidhar, N.**, Bu, J., Cao, Z., He, L., Ramakrishnan, N., Tafti, D., Karpatne, A. *PhyNet:Physics-guided Neural Networks for Particle Drag Force Prediction in Assembly.* Proceedings of the 2020 SIAM International Conference on Data Mining (SDM20). Society for Industrial and Applied Mathematics 2020. [**Selected for Publication in Special Issue on Best of SDM20**] - **(Acceptance Rate 24 %)**

30. **Muralidhar, N.**, Muthiah, S., Nakayama, K., Sharma, R., & Ramakrishnan, N. (2019, December). Multivariate Long-Term State Forecasting in Cyber-Physical Systems: A Sequence to Sequence Approach. In 2019 IEEE International Conference on Big Data (IEEE Big Data) (pp. 543-552). IEEE. - **(Acceptance Rate 18.7%)**

31. Nakayama, K., **Muralidhar, N.**, Jin, C., & Sharma R. *Detection of False Data Injection Attacks in Cyber-Physical Systems using Dynamic Invariants.* Eighteenth International Conference on Machine Learning and Applications (ICMLA) (2019 December)

32. **Muralidhar, N.**, Muthiah, S., & Ramakrishnan N. *DyAt Nets: Dynamic Attention Networks for State Forecasting in Cyber-Physical Systems.* Proceedings of the Twenty-Eighth International Joint Conference on Artificial Intelligence (IJCAI) (2019 August) - **(Acceptance Rate 17.9%)**.

33. **Muralidhar, N.**, Islam, M. R., Marwah, M., Karpatne, A., & Ramakrishnan, N. (2018, December). *Incorporating Prior Domain Knowledge into Deep Neural Networks.* In 2018 IEEE International Conference on Big Data (IEEE Big Data) (pp. 36-45) - **(Acceptance Rate 19.7%)**.

34. **Muralidhar, N.**, Rangwala H., and Han E., *Recommending Temporally Relevant News Content From Implicit Feedback Data: A Tag Based Approach.IEEE 27^{th} ICTAI 689-696* (2015) - (**Acceptance Rate 21%**)

Peer-Reviewed Workshop Proceedings

35. Xu, S., Lee, CT., Sharma, M.,Yousuf, R, B., **Muralidhar, N.**, Ramakrishnan, N. Why LLMs Are Bad at Synthetic Table Generation (and what to do about it). In the First KDD Workshop on Structured Knowledge for Large Language Models (August 2025).

36. Xu, S., **Muralidhar, N.**, Ramakrishnan, N. The Prompt is Mightier than the Example. In Workshop on KDD workshop on Prompt Optimization (August 2025).

37. Sayed, A., Muthiah, S., & **Muralidhar, N.** LLM-Modulo-Rec: Leveraging Approximate World-Knowledge of LLMs to Improve eCommerce Search Ranking Under Data Paucity. In 1^{st} Workshop on Generative AI for E-Commerce. (**Oral Presentation**)

38. **Muralidhar, N.**, Lubbers, N., Mehana, M., Ramakrishnan, N., & Karpatne, A. Knowledge-Guided Transfer Learning for Modeling Subsurface Phenomena Under Data Paucity. In NeurIPS 2022 AI for Science: Progress and Promises. (poster)

39. Tabassum, A., **Muralidhar, N.**, Kannan, R., Allu, S. Li-ion Battery Material phase prediction through Hierarchical Curriculum Learning. In NeurIPS 2022 AI for Science: Progress and Promises. (poster)

40. Sharma, M., **Muralidhar, N.**, & Ramakrishnan, N. (2022). Overcoming Barriers to Skill Injection in Language Modeling: Case Study in Arithmetic. In NeurIPS 2022 MATH-AI: Toward Human-Level Mathematical Reasoning (arXiv preprint arXiv:2211.02098) – (poster).

41. **Muralidhar, N**., Bu, Jie., Cao, Ze., He, L., Raj, N., Ramakrishnan, N., Tafti, D., & Karpatne, A. *Physics Guided Neural Networks for Spherical Particle Drag Force Prediction in Assembly.* In Proceedings of the NETL Workshop on Multiphase Flow Science. August 2021. (talk)

42. Raj, N., Cao, Z., **Muralidhar, N**., Karpatne, A., & Tafti, D. *Deep Learning Methods for Predicting Fluid Forces in Dense Ellipsoidal Particle Suspensions.* In Proceedings of the NETL Workshop on Multiphase Flow Science. August 2021. (talk)

43. **Muralidhar, N**., Muthiah, S., Butler, P., Jain, M., Yu, Y., Burne, K., Li, W., Jones, D., Arunachalam, P., McCormick, H., & Ramakrishnan, N. *Using Antipatterns to Avoid MLOps Mistakes.* In Proceedings of the 4th SIGKDD Workshop on Machine Learning in Finance (KDD-MLF 2021). (spotlight talk)

44. Rodriguez, A.*,**Muralidhar, N.,***, Adhikari, B., Tabassum, A., Ramakrishnan, N., & Prakash B.A. *Steering a Historical Disease Forecasting Model Under a Pandemic: Case of Flu and COVID-19.* NeurIPS Machine Learning in Public Health (MLPH) Workshop, Virtual Event. December 2020.

45. **Muralidhar, N**., Mayer, B., Self, N., Kondoju, P., Tonshal, B., Schmotzer, J., & Ramakrishnan, N. *RAD: Rapid Automobile Data Analytics Framework for Structured Data.* In Proceedings of the 9th SIGKDD International Workshop on Urban Computing (UrbComp 2020).

46. **Muralidhar, N.**, Bu J., Cao Z., He L., Ramakrishnan N., Tafti D., & Karpatne A. *Physics Guided Learning for Particle Drag Force Estimation in Multi Phase Fluid Flow.* Proceedings of the 3rd Workshop on Physics Informed Machine Learning 2020. (poster)

Book Chapters & Theses

47. **Muralidhar, N.** (2022). Science Guided Machine Learning: Incorporating Scientific Domain Knowledge for Learning Under Data Paucity and Noisy Contexts (Doctoral dissertation, Virginia Tech).

48. **Muralidhar, N.**, Bu, J., Cao, Z., He, L., Ramakrishnan, N., Tafti, D. & Karpatne, A. *Science-Guided Design & Evaluation of Machine Learning Models: A Case-Study on Multi-Phase Flows*, In Science Guided Machine Learning: Emerging Trends in Combining Scientific Knowledge with Data-driven Methods., Karpatne, A., Kannan, R., Kumar, V.(Eds.), (**Book to be published** in *Data Mining Knowledge Discovery Series, CRC Press*, 2022).

49. **Muralidhar, N.** *Recommending Temporally Relevant News Content From Implicit Feedback Data: A Tag Based Approach.* Masters Thesis in Computer Science, George Mason University, December 2015.

Invited Talks

Parsimonious Machine Learning: Leveraging Hierarchy-of-Compute for Generalization Under Data & Compute Paucity. Los Alamos, NM
Los-Alamos National Labs - Center for Nonlinear Studies *June 2, 2025.*

Parsimonious Machine Learning: Leveraging Hierarchy-of-Compute for Generalization Under Data & Compute Paucity. Atlanta, GA
Georgia Tech - Institute for Data Engineering and Science Seminar Series *March 12, 2025.*

Parsimonious Learning in Hierarchy of Compute Contexts Hoboken, NJ
1st *Symposium on Emerging Topics in Networks, Systems, & Cybersecurity* *August 13, 2024.*

Parsimonious Learning with Human Feedback & Computational Constraints Virtual
11th *Annual IEEE North Jersey Advanced Communications Symposium* *September 16, 2023.*

Knowledge-Guided Machine Learning Under Data Paucity & Noise Virtual
Baidu Research *March 28, 2022.*

Ending the Pandemic & Preparing for the Next One Virtual
Virginia Tech - Center for Communicating Science - Tech on Tap *April 21, 2021.*

COVID-19/ILI Forecasting Research (Lightning Talk) Virtual
NSF-NRT Annual Meeting *January 29, 2021.*

Steering a Historical Disease Forecasting Model Under a Pandemic Blacksburg, VA
Virginia Tech - Graduate Seminar Guest Lecture *October 2, 2020.*

Domain Informed Machine Learning Applications Jackson, SC
Savannah River National Labs *January 27-28, 2020.*

Characterizing Power Grid Failure During Natural Disasters Arlington, VA
Virginia Tech - Urban Computing Seminar *October, 2017.*

Anomaly Detection in Cyber-Physical Systems using Invariants Arlington, VA
Virginia Tech - Urban Computing Seminar *January, 2017.*

Issued Patents

1. Muralidhar N., Han E., Rangwala H., inventors; WP Company LLc, assignee. *Systems and Methods for Recommending Temporally Relevant News Content for Implicit Feedback Data.* United States patent **US 10,977,322**. 2021 Apr 13.

2. Nakayama K., Jin C., Sharma R., Muralidhar N., inventors; NEC Corp, assignee. *Detection of false data injection attacks in power systems using multiplex invariant networks and domain knowledge.* United States patent **US 10,585,123**. 2020 Mar 10.

Other Teaching & Mentoring Experience

1. **High School Student: Ishaan Sinha** Virtual
South Brunswick High School (now B.S. at Harvard) *Fall 2022 - Spring 2024*

2. **High School Student: Gideon Fenster** — Virtual
   Thomas Jefferson High School — *Summer 2020, 2021*

3. **M.S. Student: Gopikrishna Rathinavel** — Arlington, VA
   Virginia Tech (M.S. in CS) — *January 2021 - December 2022*

4. **Mentored Graduate Student: Neil-Ashwin Raj** — Blacksburg, VA
   Virginia Tech (Ph.D. in Mech. Engg.) — *January 2021 - May 2024*

5. **Judge, Regional Northern Virginia High School Science Fair** — Virtual
   High School (grades 7-12) — *2021*

6. **Multiple Guest Lectures Introduction to Urban Computing (CS5834)** — Virtual
   Virginia Tech — *Fall 2020/21*

7. **Teaching Assistant: Program Design & Data Structures (IT306)** — Virtual
   George Mason University — *Fall 2013, Spring 2014*

8. **Teaching Assistant: Event Driven Programming (IT308)** — Virtual
   George Mason University — *Fall 2013*

Selected Press

The Data Exchange Podcast: Using AntiPatterns to avoid MLOps Mistakes 2021

Data leakage during data preparation? Using AntiPatterns to avoid MLOps Mistakes 2021

Virginia Tech researchers garner major awards in COVID-19 forecasting challenges 2021

Catalyst Health 2.0: Year in Review, COVID19 Symptom Data Challenge Winners 2021

Announcing The COVID-19 Symptom Data Challenge Winners 2020

C3.ai COVID-19 Grand Challenge Winners 2020

Sanghani Center Student Spotlight: Nikhil Muralidhar 2020

Professional Services

1. Co-Organizer: Knowledge Guided Machine Learning Bridge Program - AAAI Spring Symposium Series - February 2024, 2025
2. Program Committee: Knowledge-Guided Artificual Intelligence Symposium - AAAI Fall Symposium Series - November 2022
3. Column Editor: *Rising Stars in AI* - SIGAI AI Matters News Letter - Sept. 2022 - Present.
4. Co-Organizer: Science Guided Artificial Intelligence Symposium - AAAI Fall Symposium Series - November 2021
5. Session Co-Chair: SIAM International Conference on Data Mining (SDM) - 2021
6. Program Committee: IEEE International Conference on Big Data (IEEE Big Data)
7. Program Committee: SIAM International Conference on Data Mining (SDM)

8. Program Committee: SIGKDD International Conference on Knowledge Discovery & Data Mining
9. Conference Reviewer: Conference on Neural Information Processing Systems (NeurIPS) – 2021 - present
10. Conference Reviewer: International Conference on Machine Learning (ICML) – 2020 - present
11. Conference Reviewer: International Conference on Learning Representations (ICLR) – 2020 - present
12. Conference Reviewer: IEEE International Conference On Data Mining (ICDM) - 2021.
13. Journal Reviewer: Transactions of Knowledge Discovery from Data (TKDD)

Participation in Panels, Workshops, Conferences, & Consortia

- **3^{rd} Knowledge Guided Machine Learning Symposium** — Arlington, VA
  AAAI Fall Symposium Series — *Nov. 17 - 19, 2022*
- **4^{th} SIGKDD Workshop on Machine Learning in Finance** — Virtual
  Special Interest Group on Knowledge Discovery and Data Mining — *August 15, 2021*
- **13^{th} Workshop on Multiphase Flow Science.** — Virtual
  U.S. Department of Energy, National Energy Technology Laboratory (NETL) — *August 5, 2021*
- **21^{th} SIAM International Conference on Data Mining (SDM21)** — Cincinnati, OH
  Society for Industrial and Applied Mathematics — *April 29- May 1, 2020*
- **35^{th} AAAI Conference on Artificial Intelligence** — Virtual
  Association for the Advancement of Artificial Intelligence — *Feb 2, 2021*
- **9^{th} SIGKDD International Workshop on Urban Computing** — Online
  Special Interest Group on Knowledge Discovery and Data Mining — *August 24, 2020*
- **3^{rd} Workshop on Physics Informed Machine Learning** — Santa Fe, NM
  Los-Alamos National Labs (Center for Non-Linear Studies) — *January 13-17, 2020*
- **International Joint Conference on Artificial Intelligence** — Macao, China
  IJCAI Inc. — *August 10-16, 2019*
- **Doctoral Consortium on Computational Sustainability** — Los Angeles, CA.
  Georgia Tech, USC, Cornell, Oregon State, Vanderbilt — *July 13-14, 2017*
- **Panelist - Getting Hired In Data Science** — Washington, D.C.
  Organizers: General Assembly — *2016*
- **International Conf. on Tools With Artificial Intelligence 2015** — Vietri Sul Mare, Italy
  IEEE — *November 9-11, 2015*