Rahul Gomes
https://www.uwec.edu/profiles/gomesr/
Web of Science Profile
Google Scholar Profile

Email : gomesr@uwec.edu
Office Phone : 715-836-3395

Education

North Dakota State University — Fargo, ND
Ph.D., Computer Science — *Dec 2019*
Dissertation Title: Incorporating Sliding Window-Based Aggregation for Evaluating Topographic Variables in Geographic Information Systems

Sikkim Manipal University — Sikkim, India
M.S., Computer Science — *April 2014*

St.Xavier's College, — Kolkata, India
B.Ed. — *August 2012*

St.Xavier's College, — Kolkata, India
B.S. — *June 2010*

Employment

Associate Professor, University of Wisconsin - Eau Claire	August 2024 - Present
Assistant Professor, University of Wisconsin - Eau Claire	July 2020 - July 2024
Assistant Professor, Minot State University	Aug 2019 - June 2020
Instructor, Minot State University	Aug 2018 - Aug 2019
Adjunct Lecturer, Dakota College at Bottineau	Aug 2019 - Dec 2019
CS Instructor, Johns Hopkins Center for Talented Youth	Jul 2018 - Aug 2018

Teaching Experience

University of Wisconsin - Eau Claire

• CS 145 – Programming for New Programmers (Java)	Fall 2020
• CS 146 – Big Picture in Computer Science	Fall 2021, and 22; Spring 2022, and 2023
• CS 268 – Web Systems	Fall 2020, 2021, 2022, 2023 and 2024; Spring 2021, and 2022
• CS 318 – Fundamentals of Web Page Design	Summer 2021, and 2022
• CS 330 - Programming Languages	Spring 2022; Fall 2022, 2024
• CS 376 – Cryptography and Network Security	Spring 2021
• CS 396 – Junior Seminar	Fall 2021, 2022, and 2023
• CS 491 – Special Topics: Data Mining	Spring 2021
• CS 491/426 – Deep Learning	Winterim 2021; Fall 2021, 2024, Spring 2023
• CS 425 – Machine Learning	Spring 2024
• CS 462 – Computer Networks	Fall 2023
• CS 388 – Unix Programming	Fall 2023
• CS 485 – Software Engineering II	Fall 2024

Minot State University

• CSCI 111 – Introduction to Web Languages	Fall 2018, and 2019

- CSCI 160 – Computer Science 1 (C++) Spring 2019, and 2020
- CSCI 340 – Computer Networks Fall 2018, and 2019
- CSCI 356 – Database Management 1 Fall 2018, and 2019
- CSCI 450 – Operating Systems Spring 2020
- CSCI 456 – Database Management 2 Spring 2019
- CSCI 458 – Network Security Spring 2019, and 2020

Dakota College at Bottineau

- ASC94 – Beginning Algebra Fall 2019

Teaching Assistant - North Dakota State University

- CSCI 114 – Microcomputer Packages Fall 2017; Spring 2017

Research and Grants

National Science Foundation(NSF)-Research Experience for Undergraduates Mar 2025 - Feb 2028
REU Site: Advancing high-performance computing opportunities in undergraduate research at UW-Eau Claire to meet challenges of multidisciplinary computational science. $459,810.
PI: **Rahul Gomes**, Co-PI: Ying Ma.

National Science Foundation(NSF)-Research Experience for Teachers Sep 2024 - Aug 2027
RET Site: Teachers As Researchers in Computing Classrooms (TARCC) Bridging Gaps in High School Computing Education in Western Wisconsin and Eastern Minnesota $550,786.
PI: Anthony Varghese, Co-PI: **Rahul Gomes**, Katrina Rothrock and Abhimanyu Ghosh.

National Science Foundation(NSF)-Research Experience for Undergraduates Jun 2022 - Feb 2026
REU Site: Advancing high-performance computing opportunities in undergraduate research at UW-Eau Claire to meet challenges of multidisciplinary computational science. $384,762.
PI: **Rahul Gomes**, Co-PI: Sudeep Bhattacharyay.

UW-Eau Claire and Mayo Clinic - Research Innovation Council Sep 2023 - Jan 2025
Retrospective Institutional Comparison of Patients Undergoing "on-pump" verses "off-pump" Coronary Artery Bypass Grafting Using Machine Learning. $9999.44
PI: Dr. Nishant Saran MBBS, Co-PI: **Rahul Gomes**.

Tommy G. Thompson Center on Public Leadership July 2021 - June 2022
Exploring Policies to Promote High-Performance Computing in Post-Pandemic Undergraduate Education in Wisconsin. $94,368.
PI: Ying Ma, Co-PI: **Rahul Gomes**, Sudeep Bhattacharyay.

NDSU, Center for Diagnostic & Therapeutic Strategies in Pancreatic Cancer Nov 2020 - Dec 2022
Using methylation and gene expression data for early detection of pancreatic cancer.
PI: Rick Jansen, Co-PI: **Rahul Gomes**. $15,000

UW-Eau Claire and Mayo Clinic - Research Innovation Council April 2021 - Dec 2022
Detection of Inferior Vena Cava Filters on CT scans using Artificial Intelligence Algorithm. $33,965
PI: Dr. Joe Wildenberg M.D., Ph.D., Co-PI: **Rahul Gomes**.

UW-Eau Claire and Mayo Clinic - Research Innovation Council May 2021 - May 2023
Predicting Chemotherapy Outcomes in Pancreatic Ductal Adenocarcinoma (PDAC) Patients Using CT Scan as A Biomarker with Help Of Artificial Intelligence.
Mayo PI: Dr. Sushil Kumar Garg. UWEC PI: **Rahul Gomes**.

Biomedical Innovation Grant-Mayo Collaborative Research Program May 2021 - May 2023
Comparison of pathways in humans and genetically engineered mouse model (GEMM) for Pancreatic Ductal Adenocarcinoma (PDAC). $15,000.
NDSU PI: Rick Jansen. UWEC PI: **Rahul Gomes**.

UW-Eau Claire, ORSP Undergraduate Research Internal Grants Oct 2020- Present

- Deep learning segmentation of kidney tissue microarrays using infrared spectral imaging.
  PI: **Rahul Gomes**, Co-PI: Michael J. Walsh. Sep 2021 - Dec 2022. $5,300.
- Exploring an optimized deep learning framework for analysis of satellite imagery.
  PI: **Rahul Gomes**, Co-PI: Papia Rozario. Oct 2020 - Feb 2022. $13,200.
- A hybrid deep learning model for prediction of severity in COVID-19 patients.
  PI: **Rahul Gomes**. Sep 2021 - Jun 2022. $2,500.

NDEPSCoR seed award for faculty to collect preliminary data. Oct 2019-May 2020

- NDCyberGIS: Integrating Big data with intelligent knowledge discovery NoSQL system for geo-visualization and machine learning.
  PI: **Rahul Gomes**, Co-PI: Anne Denton. $9,986.24.
- Cyberpatriot Outreach Program: NDEPSCoR seed award for faculty to engage k12 in STEM outreach activities.
  PI: Darren Seifert, Co-PI: **Rahul Gomes**, Sayeed Sajal. $5,987.34.

University of Wisconsin System, Regent Scholar Grant Proposal Submitted: Nov 2021
Advancing Diagnosis of Pancreatic Ductal Adenocarcinoma from CT Imaging Using Deep Learning. Requested funding: $50,000.*Denied*

NSF - CISE Research Initiation Initiative (CRII) Submitted: Nov 2020
Exploring Deep Learning Architecture Optimization Techniques for High-Dimensional Data. Requested funding: $175,000.*Denied*

Editorial Activities

- Academic Editor, PLOS ONE journal 2022-present
- Conference General Chair, IEEE Conference on Electro-Information Technology, UW-Eau Claire. 2024
- Abstract Review Leader. National Council for Undergraduate Research (NCUR). UW- Eau Claire. 2023
- Publications Chair, IEEE Conference on Electro-Information Technology, Lewis University. 2023
- Publications Chair, IEEE Conference on Electro-Information Technology, Minnesota State University, Mankato. 2022
- Session Chair, IEEE Conference on Electro-Information Technology, Central Michigan University. 2021
- Session Chair & Programming Competition Judge, Midwest Instruction and Computing Symposium, North Dakota State University. 2019.
- Reviewer, National Science Foundation (NSF). 2023
- Reviewer - Web of Science Profile
  * IEEE - Access;Transactions on Industrial Informatics.
  * ACM - Transactions on Privacy and Security.
  * MDPI - Electronics; Applied Sciences; Sensors; ISPRS International Journal of Geo-Information; Remote Sensing; Future Internet; Machine Learning and Knowledge Extraction; Computation; and Mathematics.
  * Springer - European Radiology, Scientific Reports.

Professional Activities

- Faculty Mentor, Mayo Clinic Health System AI, Analytics, and Automation Team. 2023-present
- Faculty Administrator, Blugold Center for High Performance Computing. 2021-present
- Partner, Broadening Participation in Computing in the state of Wisconsin using ICICLE High Performance Computing Infrastructure. 2022-present
- UW-Eau Claire Faculty Advisor, Student Association for Computing Machinery (SACM). 2021-2024
- UW-Eau Claire Computer Science Department Faculty Senator. 2021-2022
- UW-Eau Claire Senate Academic Policies Committee Member. 2021-2022
- Vice-Chair, IEEE Region 4 Twin Cities Section. 2022
- UW-Eau Claire College of Arts and Science Curriculum Committee Member. 2021-2022
- Secretary, IEEE Region 4 Twin Cities Section. 2021, 2023
- UW-Eau Claire Faculty Search Committee for Asst. Professor of Computer Science. 2021, 2022
- Minot State University Diversity Council Member. 2019

Peer Reviewed Publications in Conferences and Journals

: Name indicates student researcher

1. Wang, Andy, **Gomes, Rahul** and Rozario, Papia F. 2024. OSDA-ST: Advancing Open Set Domain Adaptation Through Selective Thresholding in Remote Sensing *2024 IEEE International Conference on Big Data (BigData), pp. 7563 - 7570. IEEE, 2024.*https://doi.org/10.1109/BigData62323.2024.10825228
2. Rozario, Papia F., Ravi Gadgil, Junsu Lee, **Gomes, Rahul**, Paige Keller, Yiheng Liu, Gabriel Sipos, Grace McDonnell, Westin Impola, and Joseph Rudolph. 2024. Optimizing Mobile Vision Transformers for Land Cover Classification *Applied Sciences 14, no. 13: 5920.* https://doi.org/10.3390/app14135920
3. Rozario, Papia F., Junsu Lee, Yangguang Chen, Pavithra Devy Mohan, Matthew DeWitte, and **Gomes, Rahul**. Analyzing the Impact of Geospatial Derivatives on Domain Adaptation with CycleGAN. *In 2024 IEEE International Conference on Electro Information Technology (eIT), pp. 710-715. IEEE, 2024.*https://doi.org/10.1109/eIT60633.2024.10609908
4. Tara, Vivek, Dipankar Mitra, Aditi Muduganti, Padmavathi Mali, Srabana Maiti, Shuvashis Dey, and **Gomes, Rahul**. On the Machine Learning-based Multi-class Classification of Microscopic Colitis. *In 2024 IEEE International Conference on Electro Information Technology (eIT), pp. 038-043. IEEE, 2024.*https://doi.org/10.1109/eIT60633.2024.10609954
5. McKeown, Connor, Philip Gillett, Katherine McCallum, Chloe Meyer, Nora Mitchell, and **Gomes, Rahul**. An Automated Deep Learning Approach for Analyzing Stomatal Morphometry of Poplar Trees." *In 2024 IEEE International Conference on Electro Information Technology (eIT), pp. 1-6. IEEE, 2024.*https://doi.org/10.1109/eIT60633.2024.10609904
6. Hebert, Jordan, Ryan Hratisch, **Gomes, Rahul**, William Kunkel, Daniel Marshall, Abhimanyu Ghosh, Isabella Doss et al. "High-performance computing in undergraduate education at primarily undergraduate institutions in Wisconsin: Progress, challenges, and opportunities." *Education and Information Technologies (2024): 1-25.*https://doi.org/10.1007/s10639-024-12582-6
7. **Gomes, Rahul**, Ashleigh Denison Kroschel, Stephanie Day, and Rick Jansen. "High variation across E. coli hybrid isolates identified in metabolism-related biological pathways co-expressed with virulent genes." *Gut microbes 15, no. 1 (2023): 2228042.* https://doi.org/10.1080/19490976.2023.2228042

8. Hasan, Munjur, Md Saifur Rahman, Sabrina Islam, Tanvir Ahmed, Nafiz Rifat, Mostofa Ahsan, **Gomes, Rahul**, and Md Chowdhury. Vision Transformer-based Classification for Lung and Colon Cancer using Histopathology Images." *In 2023 International Conference on Machine Learning and Applications (ICMLA), pp. 1300-1304. IEEE, 2023.*https://doi.org/10.1109/10.1109/ICMLA58977.2023.00196
9. Chowdhury, Minhaz, Rifat, Nafiz., Latif, Shadman, Ahsan, Mostofa, Rahman, M.Saifur, and **Gomes, Rahul**, 2023, May. ChatGPT: The Curious Case of Attack Vectors' Supply Chain Management Improvement. *In 2023 IEEE International Conference on Electro Information Technology (eIT) (pp. 499-504)*. IEEE. https://doi.org/10.1109/eIT57321.2023.10187385
10. Rozario, Papia.F., Ruehmann, Elenaour., Pham, Tyler, Sun, Tianqi, Jensen, Jacob, Jia, Hengrui, Yu, Zhongyue and **Gomes, Rahul**, 2023, May. Deep Learning Patch-Based Approach for Hyperspectral Image Classification. *In 2023 IEEE International Conference on Electro Information Technology (eIT) (pp. 458-463)*. IEEE.https://doi.org/10.1109/eIT57321.2023.10187387
11. Chowdhury, Minhaz, Rifat, Nafiz, Latif, Shadman, Ahsan, Mostofa, **Gomes, Rahul**, and Rahman, M.Saifur, and 2023, May. ChatGPT: A Threat Against the CIA Triad of Cyber Security. *In 2023 IEEE International Conference on Electro Information Technology (eIT) (pp. 1-6)*. IEEE. https://doi.org/10.1109/eIT57321.2023.10187355
12. Rahman, M.Saifur, Rifat, Nafiz, Ahsan, Mostofa, Islam, Sabrina, Chowdhury, Minhaz and **Gomes, Rahul**, 2023, May. Deep Learning Application for Detection of Malaria. *In 2023 IEEE International Conference on Electro Information Technology (eIT) (pp. 1-5)*. IEEE.https://doi.org/10.1109/eIT57321.2023.10187342
13. **Gomes, Rahul**, Denison Kroschel Ashleigh, Day Stephanie, and Jansen Rick. "High variation across E. coli hybrid isolates identified in metabolism-related biological pathways co-expressed with virulent genes." *Gut microbes 15 (1), 2228042.* https://doi.org/10.1080/19490976.2023.2228042
14. **Gomes, Rahul**, Pham Tyler, He Nichol, Kamrowski Connor, and Wildenberg Joe. "Analysis of Swin-UNet vision transformer for Inferior Vena Cava filter segmentation from CT scans." *Artificial Intelligence in the Life Sciences 100084, 2228042.* https://doi.org/10.1016/j.ailsci.2023.100084
15. Ghosh Abhimanyu, Kunkel William, Varghese Anthony, Ma Ying, **Gomes Rahul**, Bhattacharyya Sudeep, Mohr Molly, Doss Isabella, and Hebert Jordan."Inter-institutional Resource Sharing in Undergraduate HPC Education: Interviews with University Administrators." *Proceedings of the 54th ACM Technical Symposium on Computer Science Education.* https://doi.org/10.1145/3545945.3569784
16. **Gomes Rahul**, Kamrowski Connor, Mohan Pavithra, Langlois Jordan, and Wildenberg Joe. October 2022. "IVC filter detection using an artificial intelligence approach." *Diagnostics.* https://doi.org/10.3390/diagnostics12102475
17. **Gomes Rahul**, Paul Nijhum, He Nichol, Huber Aaron, and Jansen Rick. August 2022. "Application of feature selection and deep learning for cancer prediction using DNA methylation markers." *Genes.* https://doi.org/10.3390/genes13091557
18. Denton Anne, **Gomes Rahul**, Schwartz David, and Franzen David. August 2022. "Large-Window Curvature Computations for High-Resolution Digital Elevation Models." *IEEE Transactions on Geoscience and Remote Sensing.* https://doi.org/10.1109/TGRS.2022.3200354
19. Gomes Rahul, Kamrowski Connor, Langlois Jordan, Rozario Papia, Dircks Ian, Grottodden Keegan, Martinez Matthew, Tee Wei Zhong, Sargeant Kyle, LaFleur Corbin, Haley Mitchell. July 2022. "A Comprehensive Review of Machine Learning Used to Combat COVID-19". *Diagnostics." 2022; 12(8):1853.* https://doi.org/10.3390/diagnostics12081853
20. Ahsan Mostofa, Nygard, Kendall, **Gomes Rahul**, Chowdhury Minhaz, Rifat Nafiz, and Connolly Jayden. July 2022. "Cybersecurity Threats and Their Mitigation Approaches Using Machine Learning—A Review." *Journal of Cybersecurity and Privacy 2, no. 3 (2022): 527-555.* https://doi.org/10.3390/jcp2030027
21. Rifat Nafiz, Ahsan Mostofa, Chowdhury Minhaz, **Gomes Rahul**. May 2022. " BERT Against Social Engineering Attack: Phishing Text Detection." *2022 IEEE International Conference on Electro Information Technology (eIT) 2022 May 19 (pp. 1-6). IEEE.* https://doi.org/10.1109/eIT53891.2022.9813922
22. Ahsan Mostofa, Rifat Nafiz, Chowdhury Minhaz and **Gomes Rahul**. May 2022." Detecting Cyber Attacks: A Reinforcement Learning Based Intrusion Detection System." *2022 IEEE International Conference on Electro Information Technology (eIT) 2022 May 19 (pp. 461-466). IEEE.* https://doi.org/10.1109/eIT53891.2022.9813892

23. Ahsan Mostofa, Rifat Nafiz, Chowdhury Minhaz and **Gomes Rahul**. May 2022."Intrusion Detection for IoT Network Security with Deep Neural Network." *2022 IEEE International Conference on Electro Information Technology (eIT) 2022 May 19 (pp. 467-472). IEEE.* https://doi.org/10.1109/eIT53891.2022.9814006
24. Rifat Nafiz, Ahsan Mostofa, **Gomes Rahul** and Chowdhury Minhaz. May 2022."COVID-19 Sentiment Analysis applying BERT." *2022 IEEE International Conference on Electro Information Technology (eIT) 2022 May 19 (pp. 417-422). IEEE.* https://doi.org/10.1109/eIT53891.2022.9813777
25. Ahsan Mostofa, **Gomes Rahul**, Chowdhury Minhaz, and Nygard Kendall. March 2021. "Enhancing Machine Learning Prediction in Cybersecurity Using Dynamic Feature Selector." *Journal of Cybersecurity and Privacy 1, no. 1 (2021): 199-218.* https://doi.org/10.3390/jcp1010011
26. Rozario Papia F., and **Gomes Rahul**. July 2021. "Comparison of data mining algorithms in remote sensing using Lidar data fusion and feature selection." *2021 IEEE International Conference on Electro/Information Technology, Mount Pleasant, MI.* https://doi.org/10.1109/EIT51626.2021.9491878
27. **Gomes Rahul**, Rozario Papia F., and Adhikari Nishan. July 2021."Deep Learning optimization in remote sensing image segmentation using dilated convolutions and ShuffleNet" *2021 IEEE International Conference on Electro/Information Technology, Mount Pleasant, MI.* https://doi.org/10.1109/EIT51626.2021.9491910
28. **Gomes Rahul**, Denton Anne and Franzen David. April 2019. "Quantifying efficiency of sliding-window based aggregation technique by using predictive modelling on landform attributes derived from DEM and NDVI." *ISPRS International Journal of Geo-Information 8, no. 4 (2019).* https://doi.org/10.3390/ijgi8040196
29. **Gomes Rahul**, Denton Anne and Franzen David. May 2019. "Comparing classification accuracy of NDVI with DEM derived attributes using multi-scalar approach in Geographic Information Systems." *2019 IEEE International Conference on Electro/Information Technology (EIT). Brookings, SD.* https://doi.org/10.1109/EIT.2019.8833766
30. **Gomes Rahul**, Denton Anne and Straub Jeremy. May 2019. "Comparative study of fitness function in genetic algorithm for optimal site allocation using Lidar." *2019 IEEE International Conference on Electro/Information Technology (EIT). Brookings, SD.* https://doi.org/10.1109/EIT.2019.8833664
31. Ahsan, Mostofa, **Gomes Rahul**, and Denton Anne. May 2019."Application of a Convolutional Neural Network using transfer learning for tuberculosis detection." *2019 IEEE International Conference on Electro/Information Technology (EIT).Brookings, SD.* https://doi.org/10.1109/EIT.2019.8833768
32. **Gomes, Rahul**, Ahsan Mostofa, and Denton Anne. May 2018. "Random Forest Classifier in SDN Framework for User-Based Indoor Localization." *2018 IEEE International Conference on Electro/Information Technology (EIT).* https://doi.org/10.1109/EIT.2018.8500111
33. Denton, Anne, **Gomes Rahul**, and David Franzen. May 2018. "Scaling up Window-Based Slope Computations for Geographic Information System." *2018 IEEE International Conference on Electro/Information Technology (EIT).* https://doi.org/10.1109/EIT.2018.8500288
34. Ahsan, Mostofa, **Gomes Rahul**, and Denton Anne. May 2018. "SMOTE Implementation on Phishing Data to Enhance Cybersecurity." *2018 IEEE International Conference on Electro/Information Technology (EIT).* https://doi.org/10.1109/EIT.2018.8500086
35. Miryala Goutham, **Gomes Rahul** and Dayananda Karanam. "Comparative analysis of movie recommendation system using collaborative filtering in spark engine." ResearchGate
36. **Gomes Rahul**, and Straub Jeremy. May 2017. "Genetic algorithm for flood detection and evacuation route planning." *SPIE Defense+ Security, International Society for Optics and Photonics, 2017.* https://doi.org/10.1117/12.2266474
37. Nelson, Ryan, Andrew Gabler, Skyler Slusar, Aaron Gordon, John McMillan, **Gomes Rahul**, and Jeremy Straub. September 2017. "Additive Manufacturing (3D Printing) Material and Cost Reduction Algorithm Proof." *AIAA SPACE and Astronautics Forum and Exposition, p. 5225. 2017.* https://doi.org/10.2514/6.2017-5225
38. Dayananda Karanam, **Gomes Rahul**, and Straub Jeremy. September 2017. "An interconnected architecture for an emergency medical response unmanned aerial system." *2017 IEEE/AIAA 36th Digital Avionics Systems Conference (DASC).* https://doi.org/10.1109/DASC.2017.8102118

Poster and Abstract Presentations

1. Wildenberg Joe, Kamrowski Connor, Senor Cameron, Mohan Pavithra, and **Gomes Rahul**."Automated IVC Filter Detection from Abdominopelvic CT Exams using Deep Learning." *Society of Interventional Radiology, 2022.* (Abstract presentation) https://doi.org/10.1016/j.jvir.2022.03.225
2. Adeleke David, **Gomes Rahul**, and Jansen Rick. "Driver gene genomic alterations associated with pancreatic cancer prognosis". *Society for Epidemiologic Research 2022 Annual Meeting, Chicago, IL.*
3. Paul Nijhum, Jansen Rick, **Gomes Rahul**, He Nichol, and Huber Aaron. October 2021. "A scalable deep learning framework for breast cancer prediction using DNA methylation data." *American Society of Human Genetics, ASHG 2021.*(Poster presentation)
4. Dewitte Matt, Rozario Papia, Mohan Devy Pavithra, and **Gomes Rahul**. "Optimizing Deep Learning Architectures for Remote Sensing Image Analysis." *2021 American Association of Geographers Annual Meeting, Virtual Format* (Poster presentation)
5. **Gomes Rahul**, Durant, C., L. Chandra Deb, Y. Ming, Q. Wang, J. Zhao, S. Day, P. Bergholz, and R. Jansen. September 2020. "Virulent Gene Expression Network Analysis and Visualization in E. coli." *80th Annual Meeting of American Society of Microbiology, ND.*(Poster presentation)
6. Denton Anne, **Gomes Rahul**, and Franzen David. "Separating Landform from Noise in High-Resolution Digital Elevation Models through Scale-Adaptive Window-Based Regression." *International Conference on Spatial Statistics and Geostatistics (ICSSG 2019), New York, NY* (Abstract presentation)
7. Durant, C., **Gomes Rahul**, L. Chandra Deb, Y. Ming, Q. Wang, J. Zhao, S. Day, P. Bergholz, and R. Jansen. September 2019. "3D Visualization of Gene Expression Networks in E. coli." *6th AAPS-NDSU Research Symposium, Fargo, ND.*(Poster presentation)
8. **Gomes Rahul**, and Denton Anne, "Incorporating Data Mining and Iterative Aggregation on Geospatial Datasets to Understand Soil Health in Depressions."*ND EPSCoR 2019 State Conference, Fargodome, Fargo, ND* (Poster presentation)
9. **Gomes Rahul**, and Denton Anne. "Taking Terrain Analysis to the Big Data Era for Understanding Soil Health in Depressions." *ND EPSCoR 2018 State Conference, Alerus center, Grand Forks, ND* (Poster and Abstract presentation)
10. **Gomes Rahul**, and Denton Anne. "Application of evolutionary algorithms for disaster management and response." *2018 American Association of Geographers Annual Meeting, New Orleans, LA* (Poster presentation)
11. **Gomes Rahul**, Dayananda Karanam, Straub Jeremy, and Jones Andrew. "Human Spaceflight Robotic Medical First Responder." *68th International Astronautical Congress (IAC), Adelaide, Australia, 25-29 September 2017, IAC-17.*
12. **Gomes Rahul**, and Straub Jeremy. "Analysis of multispectral imaging data and genetic algorithm-based approach towards disaster management and recovery." *2017 NDSU Graduate School's Graduate Research Symposium* (Abstract presentation)

Publications in Regional Conferences Fostering Undergraduate Research Experience

: Name indicates student researcher

1. Morehead, Samuel; Tapia Martinez, Gabriel.; Schuldes, Matt. S., CCP; Blessing, Joshua. M., CCP; Rich, Jennifer., MPH; **Gomes Rahul**; Retrospective Institutional Comparison of Patients Undergoing "on-pump" verses "off-pump" Coronary Artery Bypass Grafting Using Machine Learning. *MCHS Undergraduate Innovation Showcase, Nov 7; Eau Claire, WI.* (Poster presentation)
2. Rolli, Alex; Mau, Brayden; **Gomes Rahul**; Blair, David; Harper, Sarah; Harnessing the Web: Transforming Web Scraped Data into Multi-Reading Level Patient Education Resources for the MCHS Wisconsin Family Medicine Practice. *IEEE Conference; 2024, May 31-June 1; Eau Claire, WI.* (Poster presentation)
3. Rolli, Alex; Mau, Brayden; **Gomes Rahul**; Garg, Sushil; Harper, Sarah; GI-What Now?: Creating an Open-Source Text-Extraction Tool for Reducing the Time to Diagnose Colonoscopy Results; *IEEE Conference; 2024, May 31-June 1; Eau Claire, WI.*(Poster presentation)

4. Rolli, Alex; Mau, Brayden; **Gomes Rahul**; Blair, David; Harper, Sarah; Harnessing the Web: Transforming Web Scraped Data into Multi-Reading Level Patient Education Resources for the MCHS Wisconsin Family Medicine Practice. *Transforming Community and Rural Healthcare Symposium; 2024, October 21-22; Rochester, MN.* (Poster presentation)
5. Rolli, Alex; Mau, Brayden; **Gomes Rahul**; Blair, David; Harper, Sarah; Harnessing the Web: Transforming Web Scraped Data into Multi-Reading Level Patient Education Resources for the MCHS Wisconsin Family Medicine Practice. *AI & I Palooza; 2024, Dec 5; Rochester, MN.* (Poster presentation)
6. Langlois Jordan, Kamrowski Connor, Martinez Matthew, Dircks Ian, Grottodden Keegan, Haley Mitchell, LaFleur Corbin, Sargeant Kyle, Tee Wei Zhong, **Gomes Rahul**. A Comprehensive Review of Artificial Intelligence Used to Combat COVID-19. *Celebration of Excellence and Research Activity, CERCA 2022.*(Poster presentation)
7. Kroschel Ashleigh, Heinecke Olivia, **Gomes Rahul**. 'Comparison of Pathways and Detection Strategies for Pancreatic Ductal Adenocarcinoma (PDAC) Using Genetically Engineered Mouse Model (GEMM)'.*Celebration of Excellence and Research Activity, CERCA 2022.*(Poster presentation)
8. Kamrowski Connor, Mohan Pavithra, Senor Cameron, **Gomes Rahul**. 'Detection of Inferior Vena Cava Filters on CT Scans Using an Artificial Intelligence Algorithm'. *Celebration of Excellence and Research Activity, CERCA 2022.*(Poster presentation)
9. He Nichol, Kamrowski Connor, Varatharajan Thulasi, Syzmoniak Amy, Lathiya Maulik, **Gomes Rahul** A Deep Learning Model for Pancreatic Ductal Adenocarcinoma Chemotherapy Outcome Prediction. *Celebration of Excellence and Research Activity, CERCA 2022.*(Poster presentation)
10. Ma Ying, **Gomes Rahul**, Bhattacharyya Sudeep, Mohr Molly, Doss Isabella, and Hebert Jordan. April 2022. 'Exploring Policies to Promote High-Performance Computing in Post-Pandemic Undergraduate Education in Wisconsin." *Celebration of Excellence and Research Activity, CERCA 2022.*(Poster presentation) https://minds.wisconsin.edu/handle/1793/83867
11. Huber Aaron, Paul Nijhum, **Gomes Rahul**, and Jansen Rick. April 2021. 'Identification of DNA Methylation Markers using Feature Selection and Deep Learning." *Celebration of Excellence and Research Activity, CERCA 2021.*(Poster presentation) http://digital.library.wisc.edu/1793/82978
12. Mohan Pavithra, Dewitte Matt, **Gomes Rahul**, and Rozario Papia. April 2021. 'Optimizing Deep Learning Architectures for Remote Sensing Image Analysis." *Celebration of Excellence and Research Activity, CERCA 2021.*(Poster presentation) http://digital.library.wisc.edu/1793/83285
13. Witham Michael, Bender Isaiah and **Gomes Rahul**. April 2019."Comparative Analysis of MariaDB's performance efficiency as a suitable replacement for MySQL." *Midwest Instruction and Computing Symposium '19, Fargo, ND.* ResearchGate link to full paper
14. Yi Sumin and **Gomes Rahul**. April 2019."Evaluating the Impact of Time Delays and Start Sequence for Effective Congestion Control Using TCP Reno, Westwood and Vegas." *Midwest Instruction and Computing Symposium '19, Fargo, ND.* ResearchGate link to full paper
15. Kamalanathan Divyaa and **Gomes Rahul**. April 2019."Comparing NoSQL and SQL Database Systems Based on Vulnerability to Injection and Adequacy of Countermeasures." *Midwest Instruction and Computing Symposium '19, Fargo, ND.* ResearchGate link to full paper
16. Griswold Gary, Carrato M, Marcel and **Gomes Rahul**. April 2019."Quantitative Analysis to Verify Fairness of TCP CUBIC in NS-2." *Midwest Instruction and Computing Symposium '19, Fargo, ND.* ResearchGate link to full paper
17. **Gomes Rahul**, Ahsan Mostofa and Denton Anne. April 2018. "Fusion of SMOTE and outlier detection techniques for land-cover classification using Support Vector Machines." *Midwest Instruction and Computing Symposium '18, Duluth MN.* Link to full paper

Selected Media Coverage

- "Faculty Feature: Dr. Rahul Gomes" *UW–Eau Claire News*, August 2025. Link.
- "Tech Industry Job Tremors and AI Boom Propel Changes at Wisconsin's Colleges" *PBS Wisconsin*, August 2025. Link.

- "Grab Your Goggles: The Ask a Scientist Series" *Volume One*, December 2024. Link.
- "UWEC Students Collaborate with Mayo Clinic on AI Model for Medical Reports" *Chippewa Valley Times*, August 2024. Link.
- "UWEC Student Researchers Explore How AI Can Help Understand Health Care" *Leader-Telegram*, August 2024. Link.
- "Menard Center and Pre-Law Club Host a Discussion on AI" *The Spectator*, February 2024. Link.
- "Governor Evers Announces AI Education Initiatives" *Wisconsin Governor's Office*, January 2024. Link.
- "Blugolds Present Projects at the Research in the Rotunda" *UW–Eau Claire News*, 2023. Link.
- "Six Faculty Members Recognized as 2024–25 University Fellows" *UW–Eau Claire Foundation News*, 2024. Link.
- "UW–Eau Claire Receives Major NSF Grant for Summer Undergraduate Research" *All In Wisconsin*, March 2022. Link.
- "UW–River Falls, Others Partner to Receive National Science Foundation Grant" *UW–River Falls News*, March 2022. Link.
- "Blugolds Rise to the Challenge of Healthcare Innovations" *UW–Eau Claire News*, 2022. Link.
- "Multiple Research Projects Help Blugold Gain Skills, Direction as She Looks to Future" *All In Wisconsin*, November 2021. Link.
- "Research Helps Blugold Discover How Computer Science, Health Care Intersect" *All In Wisconsin*, October 2021. Link.
- "What is Bioinformatics and Discussion on Bioinformatics Major at UW–Eau Claire" *Wisconsin Public Radio's "Spectrum West"*, August 2021. Link.
- "UW–Eau Claire: Building Bridges Between Health Care and Higher Education to Enhance Patient Care" *All In Wisconsin*, July 2021. Link.
- "UW–Eau Claire, HPE Collaboration a Powerful Partnership" *All In Wisconsin*, April 2021. Link.
- "Powerful New Supercomputer Will Open Doors for Research and Education at UW–Eau Claire" *Milwaukee Journal Sentinel*, April 2021. Link.
- "Making Big Data Practical" *North Dakota Established Program to Stimulate Competitive Research (ND EPSCoR) News and Notes*, February 2020. Link.

Invited Talks

- *UW-Eau Claire's Ask-A-Scientist 2024* ,"Revolutionizing Intelligence: Paradigm Shifts in AI Technology", 2024.
- *WiSys SPARK Symposium 2022* ,"Developing Usable Machine Learning Framework for Biomedical Applications", 2022.
- *WiSys Innovation BrainStorm in partnership with Mayo Clinic and UW-Eau Claire* ,"How big data is changing the healthcare industry", 2021.
- *Student Association for Computing Machinery (ACM), UW-Eau Claire*,"Preparing for graduate school", 2020.
- *Denison University*,"Optimizing image analysis techniques for processing high resolution spatial big data", 2019.
- *St. Mary's College of California*, "Optimizing image analysis techniques for processing high resolution spatial big data", 2019.
- *University of Wisconsin-Oshkosh*, "Optimizing image analysis techniques for processing high resolution spatial big data", 2019.
- *University of Wisconsin-Eau Claire*, "Optimizing image analysis techniques for processing high resolution spatial big data", 2019.
- *Minot State University*, "Analysis of multispectral imaging data and genetic algorithm based approach towards disaster management and recovery", 2018.
- *Minnesota State University, Mankato*, "Analysis of multispectral imaging data and genetic algorithm based approach towards disaster management and recovery", 2018.

Academic Scholarships and Awards

- Best top 10 abstract by Mayo Clinic AI Summit, Rochester, MN. 2025
- Collaborator of the year award by Mayo Clinic Health System, Eau Claire, WI. 2024
- Emerging Mentor Award, ORSP, Eau Claire, WI. 2023
- Best Oral Presentation Award, International Conference on Spatial Statistics and Geostatistics (ICSSG) New York, NY. 2019
- Academic Excellence in Computer Science Award, NDSU College of Science and Mathematics. 2018
- Rahul Devabhaktuni Memorial Scholarship Award, NDSU Dept. of Computer Science. 2017, 2018
- Best speaker award, Third place, Midwest Instruction and Computing Symposium, Duluth, MN. 2018
- Best Speaker Award, First place, NDSU Graduate Research Symposium. 2017
- Student travel grant recipient, NDSU College of Science & Mathematics. 2016, 2017
- General Secretary, Department of Education, St. Xavier's College Kolkata. 2011-2012