

# Abdullah Mueen

## Curriculum Vitae

University of New Mexico  
Department of Computer Science  
MSC01 1130, 1 University of New Mexico  
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### Research Interest

**Temporal Data Mining-Social Media Mining** - Focusing on trust, security, scalability and interactivity.

### Professional Preparation

- 2012 **PhD (Computer Science)**, University of California, Riverside, CA  
*Dissertation: "Exact primitives for time series data mining,"* Adviser: Dr. Eamonn Keogh
- 2006 **BSc (Computer Science)**, Bangladesh University of Engineering and Technology  
*Dissertation: "Applications of graphs in bioinformatics,"* Adviser: Dr. Saidur Rahman

### Appointments

- 2019- **Associate Professor**, Department of Computer Science, University of New Mexico
- 2013-2019 **Assistant Professor**, Department of Computer Science, University of New Mexico
- 2013 **Scientist**, Cloud and Information Services Lab, Microsoft Corporation
- 2012 **Program Manager**, Online Services Division, Microsoft Corporation
- 2009-2011 **Summer Research Intern**, Microsoft Research and HP Labs

### Awards and Honors

- 2022 ACM SIGKDD **Test-of-Time** Award
- 2019-20 Research Associateship, National Academies of Sciences, Engineering, Medicine
- 2019 Junior Faculty Research Excellence Award, School of Engineering, UNM
- 2016 Best paper nomination, ICDM 2016
- 2012 **Runner-up**, Doctoral Dissertation Award, SIGKDD 2012
- 2012 **Best paper award**, SIGKDD 2012
- 2010 Travel grants from three top conferences: KDD, SIGMOD and ICDM
- 2009 Best paper nomination, ICDM 2009
- 2007 **Graduate Research Fellowship**, University of California at Riverside
- 2006 **Champion**, webpage development contest for computer science department  
<http://www.buet.ac.bd/cse/>
- 2002-2006 Dean's Merit Scholarship for every undergraduate semester

### Refereed Journal Papers

*Student advisees are underlined*

- J1 Sheng Zhong, Vinicius M. A. de Souza, Abdullah Mueen: Combining Filtering and Cross-Correlation Efficiently for Streaming Time Series. *ACM Trans. Knowl. Discov. Data* 16(5): 100:1-100:24 (2022)
- J2 Ian Beaver, Abdullah Mueen: On the Care and Feeding of Virtual Assistants: Automating Conversation Review with AI. *AI Mag.* 42(4): 29-42 (2021)
- J3 Cynthia Freeman, Jonathan Merriman, Ian Beaver, Abdullah Mueen: Experimental Comparison and Survey of Twelve Time Series Anomaly Detection Algorithms. *J. Artif. Intell. Res.* 72: 849-899 (2021)
- J4 Vinicius M. A. de Souza, Antonio Rafael Sabino Parmezan, Farhan Asif Chowdhury, Abdullah Mueen: Efficient unsupervised drift detector for fast and high-dimensional data streams. *Knowl. Inf. Syst.* 63(6): 1497-1527 (2021)
- J5 Yifan Hao, Huiping Cao, Abdullah Mueen, Sukumar Brahma: Identify Significant Phenomenon-Specific Variables for Multivariate Time Series. *IEEE Trans. Knowl. Data Eng.* 33(3): 1019-1031 (2021)
- J6 Yan Zhu, Abdullah Mueen, Eamonn J. Keogh: Matrix Profile IX: Admissible Time Series Motif Discovery with Missing Data. *IEEE Trans. Knowl. Data Eng.* 33(6): 2616-2626 (2021)
- J7 Yan Zhu, Shaghayegh Gharghabi, Diego Furtado Silva, Hoang Anh Dau, Chin-Chia Michael Yeh, Nader Shakibay Senobari, Abdulaziz Almaslukh, Kaveh Kamgar, Zachary Zimmerman, Gareth J. Funning, Abdullah Mueen, Eamonn J. Keogh. The Swiss army knife of time series data mining: ten useful things you can do with the matrix profile and ten lines of code. *Data Min. Knowl. Discov.* 34(4): 949-979 (2020).
- J8 Hoang Anh Dau, Diego Furtado Silva, François Petitjean, Germain Forestier, Anthony J. Bagnall, Abdullah Mueen, Eamonn J. Keogh, Optimizing dynamic time warping's window width for time series data mining applications. *Data Min. Knowl. Discov.* 32(4): 1074-1120 (2018)
- J9 Abdullah Mueen, Nikan Chavoshi, Noor Abu-El-Rub, Hossein Hamooni, Amanda J. Minnich and Jonathan MacCarthy. Speeding up dynamic time warping distance for sparse time series data. *Knowl. Inf. Syst.* 54(1): 237-263 (2018)
- J10 Yan Zhu, Zachary Zimmerman, Nader Shakibay Senobari, Chin-Chia Michael Yeh, Gareth Funning, Abdullah Mueen, Philip Brisk, Eamonn J. Keogh: Exploiting a novel algorithm and GPUs to break the ten quadrillion pairwise comparisons barrier for time series motifs and joins. *Knowl. Inf. Syst.* 54(1): 203-236 (2018)
- J11 Chin-Chia Michael Yeh, Yan Zhu, Liudmila Ulanova, Nurjahan Begum, Yifei Ding, Hoang Anh Dau, Zachary Zimmerman, Diego Furtado Silva, Abdullah Mueen, Eamonn J. Keogh: Time series joins, motifs, discords and shapelets: a unifying view that exploits the matrix profile. *Data Min. Knowl. Discov.* 32(1): 83-123 (2018)
- J12 James F. Cavanagh, Praveen Kumar, Andrew Mueller, Pirio Richardson, S. and Abdullah Mueen: Diminished EEG habituation to novel events effectively classifies Parkinson's patients. *Clinical Neurophysiology*, 129: 409-418 (2018)
- J13 James F. Cavanagh, Arthur Napolitano, Christopher Wu, and Abdullah Mueen: The Patient Repository for EEG Data + Computational Tools. *Frontiers in NeuroInformatics* 11: 67 (2017)
- J14 Jesin Zakaria, Abdullah Mueen, Eamonn J. Keogh, Neal E. Young: Accelerating the discovery of unsupervised-shapelets. *Data Min. Knowl. Discov.* 30(1): 243-281 (2016)

- J15 Hossein Hamooni, Abdullah Mueen and Amy Neel. Phoneme Sequence Recognition via DTW-based classification. *Knowl. Inf. Syst.* 48(2): 253-275 (2015).
- J16 Abdullah Mueen and Nikan Chavoshi. Enumeration of time series motifs of all lengths. *Knowl. Inf. Syst.* 45(1): 105-132 (2015).
- J17 Abdullah Mueen. Time series motif discovery: dimensions and applications. *Wiley Interdisc. Rev. Data Mining and Knowledge Discovery* 4(2): 152-159 (2014).
- J18 Xiaoyue Wang, Abdullah Mueen, Hui Ding, Goce Trajcevski, Peter Scheuermann and Eamonn J. Keogh. Experimental comparison of representation methods and distance measures for time series data. *Data Min. Knowl. Discov.* 26(2): 275-309 (2013).
- J19 Thanawin Rakthanmanon, Bilson J. L. Campana, Abdullah Mueen, Gustavo E. A. P. A. Batista, M. Brandon Westover, Qiang Zhu, Jesin Zakaria and Eamonn J. Keogh: Addressing Big Data Time Series: Mining Trillions of Time Series Subsequences Under Dynamic Time Warping. *ACM Trans. Knowl. Discov. Data* 7(3): 10 (2013).
- J20 Md. Shamsuzzoha Bayzid, Md. Maksudul Alam, Abdullah Mueen and Md. Saidur Rahman. HMEC: A Heuristic Algorithm for Individual Haplotyping with Minimum Error Correction. *ISRN Bioinformatics*, vol. 2013, Article ID 291741, 2013.
- J21 Abdullah Mueen, Eamonn J. Keogh, Qiang Zhu, Sydney Cash, M. Brandon Westover and Nima Bigdely Shamlo. A disk-aware algorithm for time series motif discovery. *Data Min. Knowl. Discov.* 22(1-2): 73-105 (2011)

## Refereed Conference Papers

*Student advisees are underlined*

- C1 Md. Parvez Mollah, Biplob Debnath, Murugan Sankaradas, Srimat Chakradhar, Abdullah Mueen: Efficient Compression Method for Roadside LiDAR Data. In *the 31st ACM International Conference on Information & Knowledge Management, (CIKM) 2022: 3371-3380*
- C2 Cynthia Freeman, Jonathan Merriman, Ian Beaver, Abdullah Mueen: Experimental Comparison and Survey of Twelve Time Series Anomaly Detection Algorithms (Extended Abstract). In *the Thirty-First International Joint Conference on Artificial Intelligence, (IJCAI) 2022: 5737-5741*
- C3 Yue Lu, Renjie Wu, Abdullah Mueen, Maria A. Zuluaga, Eamonn J. Keogh: Matrix Profile XXIV: Scaling Time Series Anomaly Detection to Trillions of Datapoints and Ultra-fast Arriving Data Streams. In *28th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD) 2022: 1173-1182*
- C4 M. Ashraf Siddiquee, Vinicius M. A. Souza, Glenn Eli Baker, Abdullah Mueen: Septom: Seismic Depth Estimation Using Hierarchical Neural Networks. In *28th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD) 2022: 3889-3897*
- C5 Md Rashidul Hasan, Dheeman Saha, Farhan Asif Chowdhury, James H. Degnan, Abdullah Mueen: DiffuScope: inferring post-specific diffusion network. In *the 2021 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining, (ASONAM) 2021: 407-415*
- C6 Farhan Asif Chowdhury, Dheeman Saha, Md Rashidul Hasan, Koustuv Saha, Abdullah Mueen: Examining factors associated with Twitter account suspension following the 2020 U.S. presidential election. In *the 2021 IEEE/ACM International*

- Conference on Advances in Social Networks Analysis and Mining, (ASONAM) 2021: 607-612*
- C7 Cynthia Freeman, Ian Beaver, Abdullah Mueen: Detecting Anomalies in Sequences of Short Text Using Iterative Language Models. In *34th International FLAIRS Conference, (FLAIRS) 2021*
- C8 Cynthia Freeman, Ian Beaver, Abdullah Mueen: Improving Univariate Time Series Anomaly Detection Through Automatic Algorithm Selection and Human-in-the-Loop False-Positive Removal. In *34th International FLAIRS Conference, (FLAIRS) 2021*
- C9 Md Parvez Mollah, Vinicius M. A. Souza, Abdullah Mueen: Multi-way Time Series Join on Multi-length Patterns. In *21st IEEE International Conference on Data Mining, ICDM 2021*.
- C10 Farhan Asif Chowdhury, M. Ashraf Siddiquee, Glenn Eli Baker, Abdullah Mueen: FASER: Seismic Phase Identifier for Automated Monitoring. In *27th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD) 2021: 2714-2721*
- C11 Vinicius Souza, Farhan Chowdhury, and Abdullah Mueen. Unsupervised Drift Detection on High-speed Data Streams. In the *2020 IEEE International Conference on Big Data, (Big Data): 2020*.
- C12 Sheng Zhong, Vinicius Souza, and Abdullah Mueen. FilCorr: Filtered and Lagged Correlation on Streaming Time Series. In the *20th IEEE International Conference on Data Mining, (ICDM): (2020)*.
- C13 Farhan Asif Chowdhury, Lawrence Allen, Mohammad Yousuf, Abdullah Mueen. On Twitter Purge: A Retrospective Analysis of Suspended Users. In Companion Volume of the *29th International Web Conference (WWW) 2020: 371-378*.
- C14 Ian Beaver, Cynthia Freeman, Abdullah Mueen. Towards Awareness of Human Relational Strategies in Virtual Agents. In *The Thirty-Second Annual Conference on Innovative Applications of Artificial Intelligence (AAAI) 2020: 2602-2610*.
- C15 Ian Beaver and Abdullah Mueen. Automated Conversation Review to Surface Virtual Assistant Misunderstandings: Reducing Cost and Increasing Privacy In *The Thirty-Second Annual Conference on Innovative Applications of Artificial Intelligence (AAAI) 2020: 13140-13147*.
- C16 M Ashraf Siddiquee, Zeinab Akhavan and Abdullah Mueen, SeiSMo: Semi-supervised Time Series Motif Discovery for Seismic Signal Detection, In *The 28th ACM International Conference on Information and Knowledge Management (CIKM): 99-108, 2019*.
- C17 Cynthia Freeman, Jonathan Merriman, Ian Beaver, Abdullah Mueen, Experimental Comparison of Online Anomaly Detection Algorithms. In *The 32nd International FLAIRS Conference: 364-369 (2019)*.
- C18 Farhan Asif Chowdhury, Satomi Suzuki, Abdullah Mueen. Structured Noise Detection: Application on Well Test Pressure Derivative Data. In *25th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD): 2952-2960 (2019)*.
- C19 Noor Abu-El-Rub, Abdullah Mueen. BotCamp: Bot-driven Interactions in Social Campaigns. In *The Web Conference (WWW): 2529-2535 (2019)*.
- C20 Nikan Chavoshi and Abdullah Mueen. Model Bots, not Humans on Social Media. In *IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining, (ASONAM) 2018: 178-185*.

- C21 Hossein Hamooni, Abdullah Mueen: DisPatch: Distributed Pattern Matching over Streaming Time Series. In *IEEE BigData Conference 2018*: 2890-2899
- C22 Amanda Minnich, Nikan Chavoshi, Danai Koutra, and Abdullah Mueen. BotWalk: Efficient Adaptive Exploration of Twitter Bot Networks. In *IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining, (ASONAM)*: 467-474 (2017).
- C23 Noor Abu-El-Rub, Amanda Minnich and Abdullah Mueen. Anomalous Reviews Owing to Referral Incentive. In *IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining, (ASONAM)*: 313-316 (2017).
- C24 Noor Abu-El-Rub, Amanda Minnich and Abdullah Mueen. Impact of Referral Incentives on Mobile App Reviews. In *17th International Conference on Web Engineering (ICWE)*: 351-359 (2017).
- C25 Nikan Chavoshi, Hossein Hamooni and Abdullah Mueen. On-Demand Bot Detection and Archival System. In *26th International World Wide Web Conference (WWW Companion)*: 183-187 (2017).
- C26 Nikan Chavoshi, Hossein Hamooni and Abdullah Mueen. DeBot: Twitter Bot Detection via Warped Correlation. In *16th IEEE International Conference on Data Mining, (ICDM)*: 817-822 (2016).
- C27 Abdullah Mueen, Nikan Chavoshi, Noor Abu-El-Rub, Hossein Hamooni, Amanda Minnich. AWarp: Fast Warping Distance for Sparse Time Series. In *16th IEEE International Conference on Data Mining, (ICDM)*: 350-359 (2016)
- C28 Chin-Chia Michael Yeh, Yan Zhu, Liudmila Ulanova, Nurjahan Begum, Yifei Ding, Hoang Anh Dau, Diego Furtado Silva, Abdullah Mueen, Eamonn Keogh. Matrix Profile I: All Pairs Similarity Joins for Time Series: A Unifying View that Includes Motifs, Discords and Shapelets. In *16th IEEE International Conference on Data Mining, (ICDM)*: 1317-1322 (2016).
- C29 Yan Zhu, Zachary Zimmerman, Nader Shakibay Senobari, Chin-Chia Michael Yeh, Gareth Funning, Abdullah Mueen, Philip Brisk and Eamonn Keogh. Matrix Profile II: Exploiting a Novel Algorithm and GPUs to break the one Hundred Million Barrier for Time Series Motifs and Joins. In *16th IEEE International Conference on Data Mining, (ICDM)*: 739-348 (2016).
- C30 Nikan Chavoshi, Hossein Hamooni and Abdullah Mueen. Identifying Correlated Bots in Twitter. In *8th International Conference on Social Informatics, (SOCINFO)*: 14-21 (2016).
- C31 Hossein Hamooni, Nikan Chavoshi and Abdullah Mueen. On URL Changes and Handovers in Social Media. In *8th International Conference on Social Informatics, (SOCINFO)*: 58-74 (2016).
- C32 Tai Ching Li, Abdullah Mueen, Michalis Faloutsos and Huy Hang. Comment-Profiler: Detecting trends and parasitic behaviors in online comments. In *8th International Conference on Social Informatics, (SOCINFO)*: 75-91 (2016).
- C33 Hossein Hamooni, Biplob Debnath, Jianwu Xu, Hui Zhang, Geoff Jiang and Abdullah Mueen. LogMine: Fast Pattern Recognition for Log Analytics. In *ACM International Conference on Information and Knowledge Management, (CIKM)*: 1573-1582 (2016).
- C34 Amanda Minnich, Noor Abu-El-Rub, Maya Gokhale, Ronald Minnich, Abdullah Mueen. ClearView: Data Cleaning for Online Review Mining. In *IEEE/ACM*

- International Conference on Advances in Social Networks Analysis and Mining, (ASONAM): 555-558 (2016).*
- C35 Amanda Minnich, Nikan Chavoshi, Abdullah Mueen, Shuang Luan and Michalis Faloutsos. TrueView: Harnessing the Power of Multiple Review Sites. In *24th International World Wide Web Conference (WWW): 787-797 (2015).*
- C36 Roya Ensafi, Philipp Winter, Abdullah Mueen and Jedidiah R. Crandall. Analyzing the Great Firewall of China Over Space and Time. In *15th Privacy Enhancing Technologies Symposium (PoPETs) 2015(1): 61-76 (2015)*
- C37 Mustafa Cetin, Abdullah Mueen and Vince Calhoun. Shapelet Ensemble for Multi-dimensional Time Series. In *15th SIAM International Conference on Data Mining (SDM): 307-315 (2015)*
- C38 Hossein Hamooni and Abdullah Mueen. Dual-domain Hierarchical Classification of Phonetic Time Series. In *14th IEEE International Conference on Data Mining (ICDM): 160-169 (2014)*
- C39 Abdullah Mueen, Hossein Hamooni and Trilce Estrada. Time Series Join on Subsequence Correlation. In *14th IEEE International Conference on Data Mining (ICDM): 450-459 (2014)*
- C40 Greg Iven, Viktor Chekh, Shuang Luan, Abdullah Mueen, Peter Soliz, Wenyao Xu and Mark Burge. Non-contact Sensation Screening of Diabetic Foot Using Low Cost Infrared Sensors. In *27th International Symposium on Computer-based Medical Systems (CBMS): 479-480 (2014)*
- C41 Xi Chen, Abdullah Mueen, Vijay K. Narayanan, Nikos Karampatziakis, Gagan Bansal and Vipin Kumar. Online Discovery of Group Level Events in Time Series. In *14th SIAM International Conference on Data Mining (SDM): 632-640 (2014)*
- C42 Mahbub Hasan, Abdullah Mueen and Vassilis Tsotras. Distributed Diversification of Large Datasets. In *Second IEEE Conference on Cloud Engineering (IC2E): 67-76 (2014)*
- C43 Abdullah Mueen. Enumeration of Time Series Motifs of All Lengths. In *13th IEEE International Conference on Data Mining (ICDM): 547-556 (2013)*
- C44 Jesin Zakaria, Abdullah Mueen and Eamonn Keogh. Clustering Time series using Unsupervised-Shapelets. In *12th IEEE International Conference on Data Mining (ICDM): 785-794 (2012)*
- C45 Mahbub Hasan, Abdullah Mueen, Vassilis Tsotras and Eamonn Keogh. Diversifying Query Results on Semi-Structured Data. In *21st ACM international conference on Information and knowledge management (CIKM): 2099-2103 (2012).*
- C46 Thanawin Rakthanmanon, Bilson Campana, Abdullah Mueen, Gustavo Batista, M. Brandon Westover, Qiang Zhu, Jesin Zakaria and Eamonn Keogh. Searching and Mining Trillions of Time Series Subsequences under Dynamic Time Warping. In *18th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD): 262-270 (2012)*
- C47 Jesin Zakaria, Sarah Rotschafer, Abdullah Mueen, Khaleel Razak and Eamonn Keogh. Mining Massive Archive of Mice Sounds with Symbolized Representations. In *12th SIAM International Conference on Data Mining (SDM) 588-599 (2012)*
- C48 Bing Hu, Thanawin Rakthanmanon, Bilson Campana, Abdullah Mueen and Eamonn Keogh. Image Mining of Historical Manuscripts to Establish Provenance. In *12th SIAM International Conference on Data Mining (SDM): 804-815 (2012)*

- C49 Abdullah Mueen, Eamonn Keogh and Neal Young. Logical-Shapelets: An Expressive Primitive for Time Series Classification. In *17th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)*: 1154-1162 (2011)
- C50 Doruk Sart, Abdullah Mueen, Walid Najjar, Vit Niennattrakul and Eamonn Keogh. Accelerating Dynamic Time Warping Subsequence Search with GPUs and FPGAs. In *10th IEEE International Conference on Data Mining (ICDM)*: 1001-1006 (2010)
- C51 Abdullah Mueen and Eamonn Keogh. Online Discovery and Maintenance of Time Series Motif. In *16th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)*: 1089-1098 (2010)
- C52 Abdullah Mueen, Suman Nath and Jie Liu. Fast Approximate Correlation for Massive Time-Series Data. In *ACM SIGMOD International Conference on Management of data (SIGMOD)*: 171-182 (2010)
- C53 Abdullah Mueen, Eamonn Keogh and Nima Bigdely-Shamlo. Finding Time Series Motifs in Disk-Resident Data. In *9th IEEE International Conference on Data Mining (ICDM)*: 367-376 (2009)
- C54 Abdullah Mueen, Eamonn Keogh, Qiang Zhu, Sydney Cash and M. Brandon Westover. Exact Discovery of Time Series Motifs. In *9th SIAM International Conference on Data Mining (SDM)*: 473-484 (2009)
- C55 Abdullah Al Mueen, Md. Shamsuzzoha Bayzid, Md. Maksudul Alam and Md. Saidur Rahman. A heuristic algorithm for individual haplotyping with minimum error correction. In *BioMedical Engineering and Informatics, (BMEI)*, vol. 1, pp. 792-796 (2008)

## Patents

- P1 Md. Parvez Mollah, Abdullah Mueen, Efficient Compression Method for Roadside LiDAR Data, Provisional Patent.
- P2 Abdullah Mueen, Md. Rashidul Hasan, Dheeman Saha, DiffuScope: Inferring Post-specific Diffusion Network, Provisional Patent.
- P3 Abdullah Mueen, Hossein Hamooni, Distributed Pattern Matching Over Streaming Time Series, 10,853,372.
- P4 Abdullah Mueen, Nikan Chavoshi, System and methods for detecting bots real-time, 10,389,745
- P5 Gagan Bansal, Vijay K. Narayanan and Abdullah Mueen, Seasonality detection in time series data, US20150377938.
- P6 Shuang Luan, Abdullah Mueen, Amanda Minnich and Michalis Faloutsos. Online review assessment using multiple sources, 10,089,660.
- P7 Abdullah Mueen, Krishnamurthy Viswanathan and Chetan Gupta. Similarity search initialization. 8,972,415.
- P8 Abdullah Mueen, Krishnamurthy Viswanathan and Chetan Gupta. Determining distance between data sequences. US20130226904.
- P9 Doruk Sart, Abdullah Mueen, Walid Najjar and Eamonn Keogh. Hardware Acceleration of Dynamic Time Warping Algorithm using FPGAs. UC2011-617-1

## Research Grants

- 3.0M Total UNM budget committed to Abdullah Mueen (*shown to the left of each grant*)
- 2.0M Total UNM budget committed to Abdullah Mueen as Principal Investigator



## Active Grants

- \$111K National Institutes of Health: National Institute on Aging/Office of Behavioral and Social Sciences Research, Cumulative Life Course Effects on Aging and Health in a Long-Lived Primate Model, 2R37-AG049395, PI: Melissa Thompson, \$3M, 2022-2027
- \$63K National Institute on Aging, Novel Frameworks for Explaining Unequal Access to the Health Benefits of Social Ties: A Longitudinal Analysis in Wild Chimpanzees, R61-AG078468, PI: Melissa E. Thompson, \$655K, 2022-2024
- \$92K Gift from NEC Laboratories Americas, 2022
- \$200K NSF: III: Medium: Collaborative Research: Scaling Time Series Analytics to Massive Seismology Datasets, PI: Abdullah Mueen, \$200K, 10/2021-09/2025
- \$258K NSF: CNS: Small: Internet-Scale Measurement of TCP/IP Implementation Weaknesses, PI: Abdullah Mueen, \$258K, 10/2020-09/2023.
- \$265K Exploration of Time-series Artificial Intelligence Applicability to Sandia Production HPC Monitoring and Control, Sandia National Laboratory, PI: Abdullah Mueen, \$265K, 01/2021-12/2023
- \$556K NSF RII Track-1: *The New Mexico SMART Grid Center: Sustainable, Modular, Adaptive, Resilient, and Transactive*, PI: William Michener, Co-PI: Anne Jackle, \$20M, Subaward to Abdullah Mueen for the amount \$556K, 9/2018 - 8/2023

## Cloud Credit

- \$40K Microsoft Azure Research Award, Azure credit worth \$40K, PI: Abdullah Mueen. 11/2014-12/2016

## Prior Grants

- \$113K Air Force Research Laboratory, *Innovative data science approaches to automatic aftershock detection*, 22-0152604, PI: Abdullah Mueen, \$113K 9/15/21-9/15/22
- \$129K Sandia National Laboratory, *Modeling Recurring Event-Driven Dynamic Group and Subgroup Formation on Social Media*, PI: Abdullah Mueen, \$129K, 04/2020-09/2021
- \$32K AFRL Machine Intelligence in Nuclear Explosion Monitoring Program, PI: Abdullah Mueen, 01/2021-09/2021
- \$485K AFRL, *Advanced Time Series Data Mining Methods for Seismic Signal Discovery and Detection*, PI: Abdullah Mueen, \$485K, 07/2017 - 03/2021.
- \$201K DARPA STTR through Tau Technologies, *Interacting Swarms: Immune System to Social Media*, PI: Judy Cannon, Co-PI: Melanie Moses, Abdullah Mueen, \$667K, 12/2017-12/2021.
- \$293K NSF #1527127, CCF: SHF: *Small: Collaborative Research: Domain-specific Reconfigurable Processor for Time-Series Data Mining and Monitoring*, PI: Abdullah Mueen, \$293K, 09/1/2015 - 08/30/2019.
- \$43K NIH COBRE *Center for Brain Recovery and Repair Subproject* (NIGMS 1P20GM109089), PI: James Cavanaugh, Co-PI: Abdullah Mueen, \$500K, 09/15/2015-06/30/2020.



\$65K	ExxonMobil Upstream Research Company, <i>Discovering Subsurface Flow Patterns using Downhole Pressure Measurements</i> , PI: Abdullah Mueen, \$65K, 12/2017-08/2018
\$10K	Office of Vice President of Research, UNM, <i>PRED+CT: A Patient Repository of EEG Data &amp; Computational Tools</i> , PI: James Cavanagh, Co-PI: Abdullah Mueen, \$20K, 7/2016 - 6/2017.
\$75K	Los Alamos National Laboratory, <i>F-Electron Database</i> , PI: Abdullah Mueen, \$75K, 05/2016 - 05/2017.

## Teaching

Fall 2022	CS 521: Data Mining
Fall 2021	CS 600: Computer Science Research Practicum CS 491/591: Social Media Computing
Spring 2021	CS 261: Mathematical Foundations of Computer Science
Fall 2020	CS 600: Computer Science Research Practicum CS 521: Data Mining
Spring 2019	CS 533: Experimental Methods in Computer Science
Fall 2018	CS 521: Data Mining CS 592: Colloquium
Spring 2018	CS 533: Experimental Methods in Computer Science
Fall 2017	CS 521: Data Mining CS 592: Colloquium
Spring 2017	CS 564/464: Database Management Systems
Fall 2016	CS 521: Data Mining
Spring 2016	CS 564/464: Database Management Systems
Fall 2015	CS 521: Data Mining
Spring 2015	CS 564/464: Database Management Systems
Fall 2014	CS 591.03: Data Mining
Spring 2014	CS 564/464: Database Management Systems
Fall 2013	CS 591.03: Data Mining

## Students and Research Advisement

### Post-doctoral Researcher

**Dr. Vinicius M. A. de Souza**, Assistant Professor, Pontifícia Universidade Católica do Paraná, Brazil.

### Graduated PhD Students

*First employment after graduation is mentioned*

**Dr. Mustafa Sinan Cetin**, PhD, co-advised with Prof. Vince Calhoun, Spring 2015, Data Scientist at Intel

**Dr. Amanda Minnich**, PhD, Summer 2017, Staff Scientist, Lawrence Livermore National Laboratory

**Dr. Hossein Hamooni**, PhD, Summer 2017, Technical Staff, VISA Research

**Dr. Nikan Chavoshi**, PhD, Spring 2018, Software Engineer, Oracle Corporation

**Dr. Ian Roy Beaver**, PhD, Spring 2018, Senior Research Engineer, Verint Systems

**Dr. Noor Abu-El-Rub**, PhD, Spring 2019, Research Scientist, University of Kansas

**Dr. Cynthia Freeman**, PhD, Spring 2021, Research Engineer, Verint Systems  
**Dr. Mohammad Ashraf Siddiquee**, PhD, Summer 2022, Software Engineer,  
Microsoft Corporation

### Graduated MS Students

**Sihan Zhao**, Fall 2014  
**Daniel De Francisco Cabral**, Spring 2015  
**Duaa Momani**, Fall 2015, Self-employed  
**Aaron Gonzales**, Spring 2016, *Co-advised with Prof. Dorian Arnold*, Data Scientist,  
Tripadvisor  
**Adnan Ibn Khair**, Fall 2018, Software Engineer, Amazon  
**Zeinab Akhavan**, Spring 2019, PhD Student, Systems Lab, UNM  
**Lawrence Clyde Allen**, Spring 2020, Sandia National Laboratories

### Current Students

Farhan Asif Chowdhury, 6<sup>th</sup> year PhD Student  
Md. Rashidul Hasan, 6<sup>th</sup> year PhD Student (co-advising with Prof. Degnan)  
Sheng Zhong, 5<sup>th</sup> year PhD Student  
Parvez Mollah, 5<sup>th</sup> year PhD Student  
Ala Jararweh, 3<sup>rd</sup> year PhD Student  
Dheeman Saha, 3<sup>rd</sup> year PhD Student  
Xuzhou Qin, 2<sup>nd</sup> year PhD Student  
Solji Shin, 2<sup>nd</sup> year MS Student  
Abubakar Kasule, 2<sup>nd</sup> year MS Student  
Ariana Villegas-Suarez, 1<sup>st</sup> year MS Student  
John Cooper, Senior Undergraduate Student

### Professional Services and Activities

#### Tutorials

CIKM 2019	Abdullah Mueen, Nikan Chavoshi, Amanda Minnich. Taming Social Bots: Detection, Exploration and Measurement
SDM 2019	Abdullah Mueen, Amanda Minnich. Taming Social Bots: Detection, Exploration and Measurement
BIGDATA 2017	Abdullah Mueen, Eamonn Keogh. Matrix Profile: A Unified Approach to Time Series Data Mining
KDD 2017	Abdullah Mueen, Eamonn Keogh. Matrix Profile: A Unified Approach to Time Series Data Mining
CIKM 2016	Abdullah Mueen. Similarity Search on Time Series Data: Past, Present, and Future
DSAA 2016	Abdullah Mueen. Similarity Search on Time Series Data: Past, Present, and Future
KDD 2016	Abdullah Mueen, Eamonn Keogh. Extracting Optimal Performance from Dynamic Time Warping
ICDM 2014	Abdullah Mueen, Eamonn Keogh. Finding Repeated Structure in Time Series Data
SDM 2015	Abdullah Mueen, Eamonn Keogh. Finding Repeated Structure in Time Series Data

Cyberday 2014 Abdullah Mueen, Successful Cases in Scientific Data Mining

### Workshops

KDD 15-18 Mining and Learning from Time Series (MiLeTS), Co-Chair.

### Invited Talks and Colloquia

- 2022 *IS Colloquium at University of Maryland, Baltimore County*: Mining and Learning from Time Series Data  
*Panelist, Dynamic Data Driven Applications Systems (DDDAS) Conference 2022* on Machine Intelligence for Nuclear Explosion Monitoring  
*CS Colloquium at Florida International University*: Mining and Learning from Time Series Data
- 2021 *CISCO Seminar*: Time Series Motif Discovery
- 2020 *Panelist, IEEE Cluster workshop on High Performance Computing Systems and Applications*  
*Seismotea at the University of Utah*: Automated Phase Classification for Next Generation Seismic Data Processing  
*AFTAC Machine Learning Group*: Automated Phase Classification for Next Generation Seismic Data Processing
- 2019 *AFRL Colloquium*: Mining and Learning from Time Series Data: A Broader Perspective
- 2018 *DARPA SocialSim PI Meeting*: Interacting Swarm: Immune System to Social Media  
*CIA site visit at UNM*: DeBot: An On-demand Bot Detection System  
*4th annual BRAIN Initiative Investigators Meeting BRAIN Conference*: Data Mining Methods for Brain Signals  
*Colloquium for Machine Learning Research Fellows, Los Alamos National Lab*: Matrix Profile: A Unifying Approach to Time Series Data Mining
- 2017 *Technical Interchange Meeting at AFRL, Satellite Beach, FL*: Dynamic Time Warping: Implications for Seismic Data Analysis  
*International Conference on Networking, Systems and Security (4th NSysS 2017)*: DeBot: An On-demand Bot Detection System, Keynote
- 2016 *ExxonMobil Upstream Research*: Time Series Motif Discovery: Problems, its Variants and Solutions  
*Acoustical Society of America (ASA) Topical Meeting "Data Science and Acoustics"*: Primitives in time series mining: Algorithms and applications  
*Materials Science/Data Technology Nexus: Los Alamos National Laboratory*: Temporal Pattern Mining and Machine Learning for Material Science
- 2015 *NASA Langley Research Center, Virginia*: (Un)supervised Pattern Mining from Time Series Data for Knowledge Discovery
- 2014 *New Mexico State University, CS Colloquium*: Exact Discovery of Time Series Motifs  
*UNM Techday*: Review Fraud Detection  
*UNM STC Technology Social*: Review Fraud Detection  
*UC Davis Network Lab*: Successful Cases in Scientific Data Mining

*Los Alamos National Lab, BigDIG Meeting: Variable Length Pattern Mining from Time Series Data*  
2013 *CS Colloquium at UNM: Variable Length Pattern Mining from Time Series Data*  
*CS Colloquium at SUNY Albany: Fast Primitives for Time Series Data Mining*  
*CS Colloquium at University of Alabama, Birmingham: Fast Primitives for Time Series Data Mining*  
*Yahoo! Research at Sunnyvale, CA: Fast Primitives for Time Series Data Mining*  
*Teradata Corporation at Los Angeles, CA: Fast Primitives for Time Series Data Mining*

### Conference Technical Program Committee Member

**KDD** ACM SIGKDD Conference on Data Mining and Knowledge Discovery (2012, 2015-2022)  
**SDM** SIAM Conference on Data Mining (2013-2023)  
**ICDM** IEEE International Conference on Data Mining (2013-2016,2019-2022)  
**CIKM** ACM Conference on Information and Knowledge Management (2014-2018,2022)  
**BIGDATA** IEEE International Conference on Big Data (2016-2020)  
**ICTAI** International Conference on Tools with Artificial Intelligence (2016)  
**WSDM** ACM International Conference on Web Search and Data Mining (2017-2020)  
**AAAI** The AAAI Conference on Artificial Intelligence (2014,2018)  
**WWW** The Web Conference (2018-2022)

### Editorial Board Member

2016- Data Mining and Knowledge Discovery (**DMKD**)  
2022- Big Data Research (**BDR**)

### Journal Reviewer

**TKDE** IEEE Transactions on Knowledge and Data Engineering (2013-)  
**TWeb** ACM Transactions on the Web (2018-2019)  
**DMKD** Data Mining and Knowledge Discovery (2011-),  
**KAIS** Knowledge and Information Systems (2013-14),  
**TPDS** IEEE Transactions on Parallel and Distributed Systems (2015)

### Grant Proposal Review Panel

2021 National Science Foundation, Minority Serving Institution Program  
2020 National Science Foundation, CISE Information Science SBIR Program  
2019 National Science Foundation, CISE Information Science SBIR Program  
National Defense Science and Engineering Graduate (NDSEG) Fellowship Program  
2018 National Science Foundation, CISE Information Science SBIR Program  
2015 National Science Foundation, Smart and Connected Health program  
2014 National Science Foundation, CISE BigData program

## Media Coverage

- 2018 Interviewed by Washington Post for article "Twitter is sweeping out fake accounts like never before, putting user growth at risk" on July 2018
- 2017 Interviewed by CBS 60 Minutes show "Fake News" on January 2017
- 2016 Interviewed by KQRE for "Battling Bad Bots: UNM researchers work to keep Twitter real" on November 2016
- 2015 Interviewed by KQRE for "UNM developing trustworthy travel website" on July 2015

## University Service

- 2022 Chair, Search Committee, Computer Science
- 2020-21 Adviser to Computer Science Graduate Student Association
- 2015-19 Member of Graduate Admissions Committee
- 2016-19 Mentor: CS Undergraduate Tutor Program
- 2018 Dissertation Awards Committee
- 2018 CS Faculty Search Committee
- 2016-18 Mentor: NSF STEP Program
- 2014-16 CS Outreach Taskforce
- 2014 CyberInfrastructure Day Organizing Committee