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CURRICULUM VITA

EDUCATION

- Ph.D., Computer Engineering, Texas A&M University, 2012
- M.S. Computer Information Systems, University of Houston – Clear Lake, 2006
- B.A. Software Engineering, Central AZAD Tehran University, 2002

EXPERIENCE

- Prairie View A&M University
Assistant Professor, Computer Science Department, January 2020 – Present
- High Performance Research Computing (HPRC), The Texas A&M University System
Research Scientist, September 2017 – January 2020
- AgriLife Genomics and Bioinformatics, Texas A&M AgriLife Research, The Texas A&M University System
Bioinformatics Scientist, November 2012 – January 2020
- AgriLife Genomics and Bioinformatics, Texas A&M AgriLife Research, The Texas A&M University System
Post-Doctoral Research Associate, January 2012 – November 2012

PROFESSIONAL ACHIEVEMENTS AND PUBLICATIONS

PEER-REVIEWED JOURNAL PUBLICATIONS

- F. D. Guerrero, K. G. Bendele, N. Ghaffari, J. Guhlin, K. R. Gedye, K. E. Lawrence, P. K. Dearden, T. W. R. Harrop, A. C. G. Heath, Y. Lun, R. P. Metz, P. Teel, A. Perez de Leon, P. J. Biggs, W. E. Pomroy, C. D. Johnson, P. D. Blood, S. E. Bellgard, D. M. Tompkins, "The Pacific Biosciences de novo assembled genome dataset from a parthenogenetic New Zealand wild population of the longhorned tick, *Haemaphysalis longicornis* Neumann, 1901." *Data in Brief*, 2019.
- The Genome in a Bottle Consortium, "A robust benchmark for germline structural variant detection", *Submitted to Nature Biotechnology*, available at: <https://www.biorxiv.org/content/10.1101/664623v3>
- N. H. Ing, K. Konganti, N. Ghaffari, C. D. Johnson, D. W. Forrest, C. C. Love and D. D. Varner, "Identification and quantification of coding and long non-coding RNAs from stallion spermatozoa separated by density", *Submitted*.
- Z. G. Kolkhorst, N. Ghaffari, I. Tizard and J. M.B. Musser, "Differentially expressed genes associated with immune response in mallard ducks (*Anas platyrhynchos*) infected with parrot bornavirus 2". *Submitted*.
- J. R. Beytebiere, A. J. Trott, B. Greenwell, C. A. Osborne, H. Vitet, J. Spence, S-H Yoo, Z. Chen, J. S. Takahashi, N. Ghaffari and J. S. Menet, "Tissue-specific BMAL1 cistromes reveal that enhancer-enhancer interactions regulate rhythmic transcription", *Genes & Development*, 1;33(5-6):294-309, 2019.
- D. K. Chakravorty, M. Pennings, H. Liu, Z. Wei, D. M. Rodriguez, L. T. Jordan, D. McMullen, N. Ghaffari, S. D. Le, "Effectively Extending Computational Training Using Informal Means at Larger Institutions", *The Journal of Computational Science Education*, Volume 10, Issue 1, pp. 40 – 47, 2019

- N. Ghaffari, J. Abante, R. Singh, P. D. Blood, L. Pipes, C. Mason and C. D. Johnson, "What are the most influencing factors in reconstructing a reliable transcriptome assembly?", *Submitted. Available at bioRxiv: <https://www.biorxiv.org/content/early/2017/11/16/220269>*
- J. Abante, N. Ghaffari, C. D. Johnson, and A. Datta, "Employing hidden Markov models to assess the genetic content of genome assemblies", *GMC Bioinformatics*, 2017.
- C-C. Chen, N. Ghaffari, X. Qian, and B-J. Yoon, "Optimal hybrid sequencing and assembly: Feasibility conditions for accurate genome reconstruction and cost minimization strategy", *Journal Computational Biology and Chemistry*, 2017.
- M. F. Torres, N. Ghaffari, E. A. S. Buiate, N. Moore, S. Schwartz, C. D. Johnson, and L. J. Vaillancourt, "Colletotrichum graminicola mutant deficient in the establishment of biotrophy reveals early transcriptional events in the maize anthracnose disease interaction", *BMC Genomics*, 2016.
- N. Ghaffari, O. A. Arshad, H. Jeong, J. Thiltges, M. F. Criscitiello, B-J. Yoon, A. Datta, and C. D. Johnson, "Examining De Novo Transcriptome Assemblies via a Quality Assessment Pipeline," *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, PP(99), DOI: 10.1109/TCBB.2015.2446478, 2015.
- N. Ghaffari, A. Sanchez-Flores, D. Ryan, K. D. Garcia-Orozco, P. L. Chen, A. Ochoa-Leyva, A. A. Lopez-Zavala, J. S. Carrasco, C. Hong, L. G. Briebe, E. Rudino-Pinera, P. D. Blood, J. A. Sawyer, C. D. Johnson, S. V. Dindot, R. R. Sotelo-Mundo, and M. F. Criscitiello, "Novel Transcriptome Assembly and Improved Annotation of the Whiteleg Shrimp (*Litopenaeus vannamei*), a Dominant Crustacean in Global Seafood Mariculture", *Nature Scientific Reports*, 4, 2014.
- N. Ghaffari, M. R. Yousefi, C. D. Johnson, I. Ivanov, and E. R. Dougherty, "Modeling the Next Generation Sequencing Sample Processing Pipeline for the Purposes of Classification," *BMC Bioinformatics*, 14:307, 2013.
- R. Doan, N. Cohen, J. Sawyer, N. Ghaffari, C. D. Johnson, and S. V. Dindot, "Whole-Genome Sequencing and Genetic Variant Analysis of a Quarter Horse Mare," *BMC Genomics*, 13:78, 2012.
- N. Ghaffari, I. Ivanov, X. Qian, and E. R. Dougherty, "A CoD-based Stationary Control Policy for Intervening in Large Gene Regulatory Networks," *BMC Bioinformatics*, 12(Suppl 10):S10, 2010.
- Y. Wang, N. Ghaffari, C. D. Johnson, U. M. Braga-Neto, H. Wang, R. Chen, and H. Zhou, "Evaluation of Coverage and Depth of Transcriptome by RNA-Seq in Chickens," *BMC Bioinformatics*, 12 (Suppl 10):S5, 2011.
- X. Qian, N. Ghaffari, I. Ivanov, and E. R. Dougherty, "State Reduction for Network Intervention in Probabilistic Boolean Networks," *Bioinformatics*, 26(24):3098-3104, 2010.
- N. Ghaffari, I. Ivanov, X. Qian, and E. R. Dougherty, "A CoD-Based Reduction Algorithm for Designing Stationary Control Policies on Boolean Networks," *Bioinformatics* 26(12):1556-1563, 2010.
- Ivanov, P. Simeonov, N. Ghaffari, X. Qian, and E. R. Dougherty, "Selection Policy Induced Reduction Mappings for Boolean Networks," *IEEE Transactions on Signal Processing - TSP*, 58(9):4871-4882, 2010.
- X. Qian, I. Ivanov, N. Ghaffari, and E. R. Dougherty, "Intervention in Gene Regulatory Networks via Greedy Control Policies Based on Long-Run Behavior," *BMC Systems Biology*, 3(61), 2009.
- C. Harris, N. Ghaffari, "Biomarker Discovery across Annotated and Unannotated Microarray Datasets Using Semi-supervised Learning," *BMC Genomics*, 9(Suppl 2):S7, 2008.

CONFERENCE PUBLICATIONS AND PRESENTATIONS

- D. K. Chakravorty, D. R. McMullen, H. Liu, N. Ghaffari, D. Rodriguez and S. D. Le, "Evaluating Active Learning Approaches for Teaching Intermediate Programming at an Early Undergraduate Level", Fifth SC Workshop on Best Practices for HPC Training and Education (BPHTe18), Dallas, TX, November 2018.

- N.H. Ing, K. Konganti, N. Ghaffari, C.D. Johnson, D.W. Forrest, C.C. Love and D.D. Varner, "Functional RNAs in Stallion Sperm: Potential Indicators of Sperm Quality and Contributors to Fertility", *Journal of Equine Veterinary Science*, 66(310), August 2018.
- D. Cocom Basto, N. Ghaffari, and C. D. Johnson, "Sequencing Technologies and Their Applications ", CANIETI Summer Program, College Station, TX, 2016.
- N. H. Ing, K. Konganti, N. Ghaffari, C. D. Johnson, D. W. Forrest, C. C. Love, and D. D. Varner, "Sequencing of RNA from stallion spermatozoa identifies potential markers of fertility", 7th International Symposium on Stallion Reproduction, Champaign, IL, 2016.
- N. Ghaffari, J. Abante, R. Singh, P. D. Blood, and C. D. Johnson, "Computational Considerations in Transcriptome Assemblies and Their Evaluation, using High Quality Human RNA-Seq data", XSEDE16, Miami, FL, 2016.
- J. Abante, N. Ghaffari, C. D. Johnson, and A. Datta, "Using Hidden Markov Models to Analyze Next-Generation Sequencing Data", ENG-LIFE 2016, College Station, TX, 2016.
- A-S C. Hieke, N. Ghaffari, C. D. Johnson, and S. D. Pillai, "Transcriptomic Responses of Salmonella Typhimurium after Exposure to Lethal Doses of Electron Beam and Gamma Radiation", *Advances in Genome Biology and Technology (AGBT)*, Orlando, FL, 2016.
- R. Sotelo-Mundo, M. Criscitiello, S. Dindot, A. Ochoa-Leyva, A. Lopez-Zavala, N. Ghaffari, "Perspectives on the Impact of Next Generation Sequencing (NGS) Technologies on Shrimp Aquaculture," FENACAM'15, Fortaleza, Brazil, 2015.
- H. Jeong, O. Arshad, N. Ghaffari, J. Thiltges, P. Blood, M. Criscitiello, B-J Yoon, A. Datta and C. D. Johnson, "Comparative De novo Transcriptome Assemblies for Pacific Whiteleg Shrimp Empowered by XSEDE," XSEDE15, St. Louis, MO, 2015.
- J. Risinger, L. Renken, J. Hill, N. Ghaffari, R. P. Metz, C. D. Johnson, and M. M. Toloue, "Amplicon Based 16S Ribosomal RNA Sequencing and Genus Identification", PAG XXII, San Diego, CA, 2015.
- N. Ghaffari, O. A. Arshad, H. Jeong, J. Thiltges, M. F. Criscitielloz, B-J. Yoon, A. Datta, and C. D. Johnson, "De Novo Transcriptome Assemblies and Annotation for Pacific Whiteleg Shrimp." Genomic Signal Processing and Statistics (GENSIPS'14) conference, Atlanta, GA, 2014.
- M. Torres, N. Ghaffari, E. Buiate, S. Schwartz, C. D. Johnson, and L. Vaillancourt, "Understanding Hemibiotrophy in Colletotrichum Graminicola," Second International Symposium on Microbiology and Biotechnology, Brazil, pp. 115-124, 2013.
- M. P. McLeod, A. Golovko, N. Ghaffari, E. A. Gargari, H. Guo, C. D. Johnson, S. H. Safe, I. Jutooru, and B. Morpurgo, "A Gene Trap Resource to Characterize Cancer-Related lncRNAs in C57BL/6 ES Cells & Mice," 3rd Annual Advances in Oncology: From Clinical Science to Clinical Practice, Houston, TX, 2012.
- N. Ghaffari, M. R. Yousefi, C. D. Johnson, I. Ivanov, and E. R. Dougherty, "Classification and Feature Selection Approaches for Next Generation Sequencing," BioC2012, Seattle, WA, 2012.
- R. Doan, N. Cohen, J. Sawyer, N. Ghaffari, C. D. Johnson, and S. V. Dindot, "Whole-Genome Analysis of a Quarter Horse Mare," Plant and Animal Genome XX Conference, San Diego, CA, 2012.
- N. Ghaffari, I. Ivanov, and E. R. Dougherty, "Intervention in Large Gene Regulatory Networks via A Novel Greedy Control Policy," MCBIOS, College Station, TX, 2011.
- N. Ghaffari, "Controlling Gene Regulatory Networks via a Greedy Approach: CoD-CP," SRW, College Station, TX, 2011.
- N. Ghaffari, I. Ivanov, and E. R. Dougherty, "A CoD Based Reduction Algorithm for Boolean and Probabilistic Boolean Networks," IEEE International Workshop on Genomic Signal Processing and Statistics (GENSIPS'09), Minneapolis, MN, 2009.
- N. Ghaffari, I. Ivanov, and E. R. Dougherty, "Reduction Mappings and Control Policies for Intervention in Boolean Networks," IEEE International Workshop on Genomic Signal Processing and Statistics (GENSIPS'08), Phoenix, AZ, 2008.
- C. Harris and N. Ghaffari, "Biomarker Discovery in Genomic Data with Partial Clinical Annotation," Rocky Mountain Bioinformatics Conference, a meeting of the International Society for Computational Biology (ISCB), Snowmass, CO, 2006.

- H. Al-Mubaid and N. Ghaffari, "Identifying the Most Significant Genes from Gene Expression Profiles for Sample Classification," *Proceedings of the IEEE Granular Computing (GrC06)*, pp. 655-659, Atlanta, GA, 2006.
- N. Ghaffari and H. Al-Mubaid, "A New Gene Selection Technique Using Feature Selection Methodology," *Proceedings of the 21st International Conference on Computers and Their Applications (CATA06)*, pp. 217-222, Seattle, WA, 2006.