

Curriculum Vitae - Ashraf S. Yaseen

CONTACT INFORMATION RAS E807, Department of Biostatistics and Data Science - School of Public Health. UTHealth (University of Texas Health Science Center at Houston). 1200 Pressler, Houston, TX 77030-3900 Office Phone: (713) 500-9583
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EDUCATION

Old Dominion University (ODU), Norfolk, VA
PhD., Computer Science, Dec 2014

- Dissertation Title: *“Improving Structural Features Prediction in Protein Structure Modeling”*
- Advisor: Dr. Yaohang Li

New York Institute of Technology (NYIT)
M.S., Computer Science, August 2003

- With Distinction
- Research: Multithreaded Heuristic Search. (*Multithreaded programming techniques to enhance the performance of heuristic search algorithms*)

Jordan University of Science and Technology (JUST)
B.S., Computer Science & Information Technology, July 2002

- On the Honors List of the School of Information Technology
- Project: E-Auto Insurance System. (*Database application on Oracle*)
- Research: Distributed Heuristic Search. (*Using distributed systems in searching algorithms like A* and IDA**)

RESEARCH INTERESTS

- **Bioinformatics** (Protein Modeling)
- **Machine Learning, Data Analysis, Big Data**
- **High Performance Computing**

WORK EXPERIENCE

UTHealth – Houston, TX 1/2018-present
Assistant Professor of Data Science
Center for Big Data in Health Sciences

- Research in Data Analysis, Machine Learning, Big Data, Bioinformatics, and High Performance Computing
- Teach courses
 - PH1976 - Fundamentals of Data Analytics and Predictions
 - PH1977 - Data Science Computing
 - PH1978 - Machine Learning in Practice

Texas A&M University Kingsville – Kingsville, TX 9/2014-1/2018
Assistant Professor of Computer Science
Director of the Computational Sciences Lab

- Teach courses
 - CSEN-5303 Topics: Bioinformatics Computing (Graduate)
 - CSEN-5303 Topics: Cloud Computing (Graduate)

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- CSEN-4336 Introduction to Bioinformatics (Undergraduate)
- CSEN-5314 Database Systems (Graduate)
- CSEN-3314 Database Systems (Undergraduate)
- CSEN-5322 Operating Systems (Graduate)
- CSEN-5323 Computer Communication Networks (Graduate)
- Advise students
 - CSEN-5305 Graduate Research Project (Graduate)
 - CSEN-5306 Thesis (Graduate)
- Develop and introduce courses
 - Introduction to Bioinformatics (Undergraduate)
 - Bioinformatics Computing (Graduate)
 - Machine Learning (Graduate)
- Research in Bioinformatics, Machine Learning, Security Engineering, Border Security, High Performance Computing
- Collaborate with colleges in academia and industry
- Lead a team of junior faculty members through the Computational Sciences Lab
- Develop curricula, serve on departmental, college, and university committees, and perform scholarly and service activities

Central State University – Wilberforce, OH
Assistant Professor of Computer Science

8/2013-
8/2014

- Teach courses
 - CPS-1192 Computer Programming in C++
 - CPS-2236 Contemporary Operating Systems
 - CPS-3316 Computer Networks
 - CPS-3320 Database Systems
 - CPS-3340 Computer Architecture
- Faculty Researcher for NSF-Cyber sensors and NSF-TUES grants
- Advise students, develop curricula, serve on departmental, college, and university committees, and perform scholarly and service activities

Old Dominion University - Norfolk, VA
Research Assistant

2010-2013

- Machine learning methods to improve protein features predictions
- Protein modeling
- Using NVIDIA's GPU in computational biology algorithms

Old Dominion University - Norfolk, VA
Teaching Assistant - Lab Instructor for

2007-2010

- CS-150 Problem Solving and Programming I
- CS-250 Problem Solving and Programming II

Jordan University of Science & Technology - Irbid, Jordan
Lecturer of Computer Information Systems

2003-2007

- Teach courses
 - CS-430 Knowledge-based Systems
 - CS-421 Database Applications using Oracle

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- CS-112 Programming in C++
- CS-115 Programming in C++ (for non CS major)
- CS-116 Programming in Visual Basic (for non CS major)
- Senior project advisor
- Advise students, develop curricula, serve on departmental, college, and university committees, and perform scholarly and service activities

Jordan University of Science & Technology - Irbid, Jordan 2002-2003
Teaching Assistant, teach

- CS-101 Introduction to Computer Science

Al-Najjar Center - Irbid, Jordan 2001-2002
Database Developer (part-time job)

- Design and implement database applications using Oracle
- Train on using Oracle

Creative Systems - Irbid, Jordan 2000-2001
Computer Programmer using Visual Basic (part-time job)

PUBLICATIONS

Journal Papers

- Ashraf Yaseen, Hao Ji, and Yaohang Li, "A Load-Balancing Workload Distribution Scheme for Three-Body Interaction Computation on Graphics Processing Units (GPU)". *Journal of Parallel and Distributed Computing*, 87: 91–101, 2016.
- Ashraf Yaseen, Mais Nijim, Brandon Williams, Lei Qian, Min Li, Jianxin Wang, and Yaohang Li "FLEXc: protein flexibility prediction using context-based statistics, predicted structural features, and sequence information". *BMC Bioinformatics*, vol. 17 Suppl 8, pp. 281, 2016.
- Mais Nijim and Ashraf Yaseen, "HuBum: Energy Efficient Hybrid Mobile Storage Systems using Solid States and Buffer Disks". *Journal of Computer Communication and Collaboration*, 2015
- Ashraf Yaseen and Yaohang Li, "Context-based Features Enhance Protein Secondary Structure Prediction Accuracy". *Journal of Chemical Information and Modeling*, 54 (3), pp 992–1002, 2014.
- Ashraf Yaseen and Yaohang Li, "Template-based C8-SCORPION: a protein 8-state secondary structure prediction method using structural information and context-based features", *BMC Bioinformatics*, 15(Suppl 8):S3, 2014.
- Ashraf Yaseen and Yaohang Li, "Dinosolve: A Protein Disulfide Bonding Prediction Server using Context-based Features to Enhance Prediction Accuracy", *BMC Bioinformatics*, 14(Suppl 13):S9, 2013.
- Ashraf Yaseen and Yaohang Li, "Accelerating Knowledge-based Energy Evaluation in Protein Structure Modeling with Graphics Processing Units," *Journal of Parallel and Distributed Computing*, 72(2): 297-307, 2012.
- Weihang Zhu, Ashraf Yaseen and Yaohang Li "DEMCMC-GPU: An Efficient Multi-Objective Optimization Method with GPU Acceleration on the Fermi Architecture" *New Generation Computing*, 29(2): 163-184, 2011.
- Ashraf Yaseen and Yaohang Li, "CASA: a protein solvent accessibility prediction server using context based features to enhance prediction accuracy", in press, *BMC Bioinformatics* 2017.

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- Ashraf Yaseen and Yaohang Li, "Using bidirectional recurrent neural networks for improving protein secondary structure prediction by capturing non-local interactions", to be submitted BMC Bioinformatics, 2018.
- Ashraf Yaseen, "Multi-task learning in protein structural features predictions", to be submitted BMC Bioinformatics, 2018.

Conference Proceedings

- Zhiqiang Wu, Bin Wang, Chi-Hao Cheng, Dr. Deng Cao, and Ashraf Yaseen. "Software Defined Radio Laboratory Platform for Enhancing Undergraduate Communication and Networking Curricula," 2014 ASEE Conference, 2014.
- Ashraf Yaseen and Yaohang Li "Predicting Protein Solvent Accessibility with Sequence, Evolutionary Information and Context-based Features". Biotechnology and Bioinformatics Symposium, (BIOT2013) Provo, 2013.
- Yaohang Li and Ashraf Yaseen, "Pareto-based Optimal Sampling Method and Its Applications in Protein Structural Conformation Sampling". AAAI Workshop on Artificial Intelligence and Robotics Methods in Computational Biology, Bellevue, 2013.
- Ashraf Yaseen and Yaohang Li "Template-based Prediction of Protein 8-states Secondary Structures". 3rd IEEE International Conference on Computational Advances in Bio and Medical Sciences (ICCABS2013), New Orleans 2013.
- Ashraf Yaseen and Yaohang Li "Enhancing Protein Disulfide Bonding Prediction Accuracy with Context-based Features", Proceedings of Biotechnology and Bioinformatics Symposium, (BIOT2012), Provo, 2012.
- Ashraf Yaseen, Kurt J. Maly, Steven J. Zeil and Mohammad Zubair "Performance Evaluation of Oracle Semantic Technologies with respect to User Defined Rules". Proceeding of Database and Expert Systems Applications, DEXA, International Workshops, Toulouse, France, August 29, 2011.

Posters

- Praveenraj Uthamarajan and Ashraf Yaseen, "Analysis of Systems using Distributed Consensus Algorithms". College of Engineering-TAMUK, 2017.
- Megha Lalluvadia and Ashraf Yaseen, "Applications of Text Classification". College of Engineering-TAMUK, 2017.
- Varun Agrawal, Gaurav Dokania, and Ashraf Yaseen, "Predicting protein flexibility and disorder". Texas A&M University System 12th Annual Pathways Student Research Symposium, Corpus Christi, TX, 2015.
- Anurag Gupta, Hridya Gopalakrishna, and Ashraf Yaseen, "Predicting protein solvent accessibility". Texas A&M University System 12th Annual Pathways Student Research Symposium, Corpus Christi, TX, 2015.
- Ashraf Yaseen, Mais Nijim, Brandon Williams, Lei Qian, and Yaohang Li "Predicting Protein Flexibility using Context-based Statistics, Predicted Structural Features, and Sequence Information". 11th International Symposium on Bioinformatics Research and Applications (ISBRA), Norfolk, Virginia, 2015. (*Awarded #1 best poster*).
- Ashraf Yaseen, Akeem Edwards and Yaohang Li, "Improving Intermediate Steps in ab initio Protein Molding", 14th Annual Tidewater Student Research Poster Session at Christopher Newport University. Nov, 2012.

Invited Talks

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- Ashraf Yaseen, "Predicting Protein Structural Features", Fisk University, Nashville, TN. 2014.
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RESEARCH GRANTS

Funded

- Computational Sciences Lab: A project to establish a High Performance Computing Multidisciplinary Research lab. Office of Research and Sponsored Programs (ORSP)-TAMUK, 2016, \$93,872.02. Role: PI.
 - Development of Javelinas-Server for Predicting Protein Structural Features. Office of Research and Sponsored Programs (ORSP)-TAMUK, 2016, \$3,000. Role: PI.
 - Security Engineering: Development of Curriculum and Research for Homeland Security. Department of Homeland Security, 2015-2018, \$698,000. Role: Co-investigator. PI: Dr. Selahattin Ozcelik.
 - Software Defined Radio Laboratory Platform for Enhancing Undergraduate Communication and Networking Curricula. NSF-TUES (Transforming Undergraduate Education in Science, Technology, Engineering and Mathematics), 2013-2014, \$100,000. Role: Co-investigator.
 - Participating institutions: Wright State University (Lead), Miami University Oxford Campus, and Central State University.
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AWARDS

- ☐ Professional Development Award (Best Performance). Center for Teaching Effectiveness, New Faculty Investment Program (NFIP), TAMUK, 2016.
 - ☐ Summer Research Award, Office of Research and Sponsored Programs (ORSP), TAMUK, 2016.
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PROFESSIONAL GROWTH & ACTIVITIES

Membership in Professional Societies

- Technology Collaboration Center of Houston (TCC)
- Association for Computing Machinery (ACM)
- Institute of Electrical and Electronics Engineers (IEEE)

Leadership Roles in Professional Societies

- Services as Conference/Workshop Organizer (Publication Chair and Sessions Chair)
 - 2015 International Symposium on Bioinformatics Research and Applications (ISBRA2015)
- Services as Conference Program Committee Member
 - 2014 Conference on Information and Computer Technology (CICT2014)
 - 2015 International Symposium on Bioinformatics Research and Applications (ISBRA2015)
 - 2016 International Symposium on Bioinformatics Research and Applications (ISBRA2016)
 - 2017 International Symposium on Bioinformatics Research and Applications (ISBRA2017)

- Services as Paper Reviewer

Journals

- ACM/IEEE Transactions on Computational Biology and Bioinformatics
- BMC Bioinformatics
- Journal of Information Science
- International Journal of Sensor Networks (IJSNET)
- International Journal of Cloud Applications & Computing

Conferences

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- 2015-2017 International Symposium on Bioinformatics Research and Applications-ISBRA
- Services as Proposal Reviewer
 - Biomedical Research Group-TAMUK
- Service as a judge for
 - The Annual Engineering Senior Design Conference, Texas A&M University-Kingsville
 - Graduate Students' Research Poster Competition, Texas A&M University-Kingsville

Attendance at Professional Meetings

- NSF CAREER writing workshop Portland, OR. April 2-4, 2017
- NSF CAREER writing workshop and meeting with Program Directors at the NSF, Washington DC. March 20-21, 2017
- Grant development workshops and webinars
- TAMUK "New Faculty Investment Program" 2014-2016
- ABET retreat meetings
- College tenure track mentoring / orientation session for tenure track faculty
- Annual Faculty Advisor Training.

Participation in Workshops

- CCICADA Workshop: Command, Control, and Interoperability Center for Advanced Data Analysis, Reconnect 2016 program.
 - Cybersecurity Institute. U.S. Military Academy at West Point, NY. June 12-18, 2016.
 - Topics include: Mathematical and Computational Tools of Cybersecurity, Encryption Analysis, Cyber Operations and Social Media Analysis, Game Theory and Artificial Intelligence applied to Physical Security, Dark Web, Social Media Analysis on Violent Extremist Organizations, etc.
- Texas Advanced Computing Center (TACC) Workshop
 - 10th annual TACC Summer Supercomputing Institute, The University of Texas at Austin. August 1-5 in Austin, Texas.
 - Topics include: Visualization, Data Analysis, and Parallel Applications
- Workshop on Sustainable Energy Systems. Prof. P.K. Sen: "Energy, Electricity and Renewable Energy Resources: Sustainable Energy Systems", TAMUK, May 2nd, 2016.

SERVICE ACTIVITIES

Membership on University, College, and Department Committees

- Former Director of TAMUK Computational Sciences Lab
- Member of the TAMUK Biomed Research Group

SKILLS

- Comprehensive knowledge in programming languages (C, C++, Perl, Python, PHP, FORTRAN, Visual Basic, JAVA, and other languages), and many software applications.
 - Excellent knowledge and experience in
 - Parallel programming using OpenMP and MPI
 - CUDA-GPU programming
 - Computer system architectures
 - Database management systems (Oracle and MYSQL)
 - Matlab and R
 - Web design and programming
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TOOLS

- Dinosolve: a protein disulfide bonding prediction server
<http://hpcr.cs.odu.edu/dinosolve>
 - C3-Scorpion: a protein 3-state secondary structure prediction server
<http://hpcr.cs.odu.edu/c3scorpion>
 - C8-Scorpion: a protein 8-state secondary structure prediction server
<http://hpcr.cs.odu.edu/c8scorpion>
 - Casa: a protein solvent accessibility prediction server
<http://hpcr.cs.odu.edu/casa>
 - FLEXc: a protein flexibility prediction server
<http://hpcr.cs.odu.edu/flexc>
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