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Personal Information

Name: Emad Alharbi

Email: emalharbi@ut.edu.sa emad.alharbi@york.ac.uk

Webpage: www.emadalharbi.com Github: https://github.com/E-Alharbi

Research Interests

My research area is artificial intelligence (AI). Especially, using machine learning to build protein structure from an electron-density map. Moreover, I'm also working on NLP.

Qualifications

- **PhD in Computer Science, July 2022. Department of Computer Science, University of York, UK.**

Thesis title: Improving the Performance of Protein Model Synthesis from Electron-Density Maps.

Supervisors: Professor Radu Calinescu and Professor Kevin Cowtan.

- **MSc in Advanced Computer Science, July 2017. Department of Informatics, University of Leicester, UK. (Awarded with Distinction)**

Thesis title: XML Fuzzing.

Supervisor: Dr Nir Piterman.

- **BSc in Computer Science , June 2012 . Collage of Computer and Information technology , University of Tabuk , Saudi Arabia.**

Thesis title: iTabukUniv, An iPhone Application to assist University of Tabuk's staff members, students and guest users.

Supervisor: Dr Ghazi Al-Naymat.

Academic Employment

- Aug 2022 - Present , Assistant professor at University of Tabuk, Saudi Arabia.
- Jan 2022 - Mar 2022, Research trainee at University of York, UK. (part-time)

- Autumn term 2018, TA at University of York, UK. (part-time)
- Spring term 2017, TA at University of Leicester, UK. (part-time)
- Mar 2016 - Aug 2022, Demonstrator at University of Tabuk, Saudi Arabia.

Industry Employment

- Dec 2013 - Aug 2014, Developer, North West Armed Forces Hospital, Tabuk, Saudi Arabia.

Publications

- **Alharbi, E.**, Calinescu, R. and Cowtan, K., 2023. Buccaneer model building with neural network fragment selection. *Acta Crystallographica Section D: Structural Biology*, *79*(4). https://doi.org/10.1107/S205979832300181X
- **Alharbi, E.**, Bond, P., Calinescu, R. and Cowtan, K., 2021. Predicting the performance of automated crystallographic model-building pipelines. *Acta Crystallographica Section D: Structural Biology*, *77*(12). https://doi.org/10.1107/S2059798321010500
- **Alharbi, E.**, Calinescu, R. and Cowtan, K., 2020. Pairwise running of automated crystallographic model-building pipelines. *Acta Crystallographica Section D: Structural Biology*, *76*(9). https://doi.org/10.1107/S2059798320010542
- **Alharbi, E.**, Bond, P. S., Calinescu, R., & Cowtan, K. (2019). Comparison of automated crystallographic model-building pipelines. Acta Crystallographica Section D Structural Biology, 75(12). https://doi.org/10.1107/s2059798319014918

Teaching

- Visual programming in C# (University of Tabuk, Summer 2023)
- Multimedia systems (University of Tabuk, Spring, Summer and Autumn 2023)
- Java programming 1 (University of Tabuk, Autumn 2022)
- Java programming 2 (University of Tabuk, Autumn 2022 and Spring 2023)
- System integration and architecture (University of Tabuk, Autumn 2022, Summer and Autumn 2023)
- Theory & Practice of Programming (University of York, Autumn 2018- TA)
- Data Structures and Development Environments (University of Leicester, Spring 2017- TA)

Administrative Duties

- IT department quality coordinator (2023).

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Academic Duties

- Member of BSc graduation project examination committee (2023).
- The third ICCIT conference AI track chair (2023).
- Member of outstanding research award committee (2023).
- Head of outstanding research award committee (2023 - 2024).
- Consultant at vice-presidency for postgraduate studies and scientific research for strategic planning (2024).

Technical Certificates

- Microsoft Specialist Programming in C#
- Microsoft Technology Associate: Database Fundamentals
- Microsoft Certified Solutions Associate: Windows Server 2012 (MCSA)

Awards

- University of Tabuk President Award for Outstanding Research by Academic Staff Studying Abroad 2022.
- Highly Commended Poster in York Doctoral Symposium 2017- University of York, UK.
- Best MSc Technical Project Prize 2017 - University of Leicester, UK.
- Two Times the first winner in Scientific Students Forum at University of Tabuk in 2011 and 2012.

Conferences

- CCP4 Study Weekend 2022.
- CCP4 Study Weekend 2020.
- CCP4 Study Weekend 2019.
- CCP4 Study Weekend 2018.
- The Tenth York Doctoral Symposium on Computer Science and Electronics (YDS 2017).

Workshops and Training Courses

- Workshop on Machine Learning Applications in Macromolecular. Crystallography and Cryo-Microscopy (Sept 2020).
- Introduction to Viking Research Computing Cluster (Viking) (Jan 2019).
- Introduction to York Advanced Research Computing Cluster (Yarcc) (Feb 2018).
- Analysing and using 3D structures in molecular bioscience research (2017).
- Introduction to Teaching and Learning (Nov 2017).

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Technical Skills

Programming Languages	C#, Objective C, JAVA, R, C++ and Python
DBMS and Tools	SQL, MySQL
Software Packages	Xcode, Visual Studio, Eclipse, Protégé and Jmetal
ML frameworks	Weka, mlpack and Keras

Languages

- Arabic (native speaker).
- English.