

Alia R. A. Al-Ghosoun

Flat 49, Middleham Road, Newton Hall, Durham, United Kingdom, DH15QH

algsoon2006@yahoo.com | +447445333636

EDUCATION

- **Doctor of Philosophy in Engineering**, Department of Engineering, Durham university, United Kingdom. **Nov 2016 – Jan 2021**

- DPhil Project is to study the effects of the sudden bathymetry movement of the shallow water flows, and its interaction with the bed. In addition to develop an adaptive control method to enable an accurate representation for the bed characteristics from given shallow water data to enhance the accuracy of the whole shallow water system.

- **Master of Science in Mechanical Engineering**, School of Engineering, University of Jordan, Amman, Jordan. **Sep 2011 – Aug 2014**

- The project was developing an artificial intelligent technique to predict the amount of fuel consumption in Jordan for the coming 50 years, based on a given data history, and develop an adaptive control technique (Genetic algorithms) to solve for the optimal use of the fuel to achieve the minimum cost and minimum pollutions.

- **Bachelor of Science in Mechatronics Engineering**, School of Engineering, University of Jordan, Amman, Jordan. **Sep 2005 – Jan 2010**

- Develop an adaptive control technique to solve the university course time tabling problem, using artificial intelligent discrete Genetic algorithms, based on the school requirements.

- **General Secondary Study in Science Stream**, Average Grade (Tawjihi): 90.5/100
Marsa' Secondary School, Jerash, Jordan. **Sep 2004 – Aug 2005**

WORK EXPERIENCE

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|------------------------------------|--|-----------------------------|
| - Assistant Professor | Mechatronics engineering department, Philadelphia university, Amman-Jordan | Oct, 2022-Present |
| - Post Doctorate Researcher | Engineering department, Durham university, Durham, United Kingdom. | Oct 2021 - Oct, 2022 |
| - DPhil Researcher | Engineering department, Durham university, Durham, United Kingdom. | Nov 2016 – Jan, 2021 |
| - Research Assistant | Water, Energy and Environment center, University of Jordan, Amman, Jordan. | Jul 2012 – Sep 2016 |
| - Research Assistant | King Abdullah design and development Bureau (KADDB), Amman, Jordan. | Mar 2012 – Jul 2012 |
| - Teaching Assistant | Mechatronics Engineering department, University of Jordan, Amman, Jordan. | Jun 2010 – Mar 2012 |

CURRICULUM VITAE

- **Teaching Assistant** Mechanical Engineering department, University of Jordan, Amman, Jordan. **Jun 2010 – Mar 2012**
- **Quality Assurance** Professionals of Energy, Environment and Water solutions company, Amman, Jordan. **Jan 2010 – Jun 2010**
- **Lecturer** Al-Qusour Academy, Amman, Jordan. **Sep 2009 – Jan 2010**
- **Intern** Mechatronics Engineering department in cooperation with Queen Alia international airport, Amman, Jordan. **Jun 2009 – Sep 2009**

PUBLICATIONS

- Journals:

1. **Alia Al Ghosoun**, Nabil El Mocayd, and Mohammed Seaid. **A non-intrusive reduced-order model for uncertainty quantification in numerical solution of one-dimensional free-surface water flows over stochastic beds.** *International Journal of Computational Methods*, 2021. <https://doi.org/10.1142/S0219876221500730> **Published**
[\(Link\)](#)
2. **Alia Al-Ghosoun**, Nabil El Mocayd, and Mohammed Seaid. **Surrogate model for efficient quantification of uncertainties in multilayer shallow water flows.** *Environmental modelling and software*.144(2021): 1-17. **Published**
[\(Link\)](#)
3. **Alia Al-Ghosoun**, Ashraf Osman, and Mohammed Seaid. **A computational model for simulation of shallow water waves by elastic deformations in the topography.** *Communication in computational physics*. 29(2021): 1059-1124. **Published**
[\(Link\)](#)
4. **Alia Al-Ghosoun**, Ashraf Osman, and Mohammed Seaid . **Hybrid finite volume/finite element simulations of wave runoff by static deformation on seabeds."** *Engineering Computations*. 38.5 (2021): 2434-2459. **Published**
[\(Link\)](#)
5. **Alia Al Ghosoun**, Nabil El Mocayd, and Mohammed Seaid. **An optimal control method for reconstruction of topography in dam-breaks flows.** *International Journal of mechanical and mechatronics engineering*, 14(2020):250-262. **Published**
[\(Link\)](#)
6. Nabil El Mocayd, **Alia Al Ghosoun**, Driss Ouazar, and Mohammed Seaid. **Uncertainty quantification of bathymetric effects in a two-layer shallow water model: case of the Gibraltar straits.** *Advances in Hydroinformatics*, 2020. **Published**
[\(Link\)](#)
7. **Alia Al-Ghosoun**, Michael Herty, and Mohammed Seaid. **A new numerical treatment of moving wet/dry fronts in dam-break** **Published**
[\(Link\)](#)

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flows." *Journal of applied mathematics and computing.* 59(2018): 489-516.

Published

[\(Link\)](#)

8. **Alia Al-Ghosoun**, Ashraf Osman, and Mohammed Seaid . **A finite element/finite volume method for dam-break flows over deformable beds."** *International Journal of bioengineering and life sciences.* 12(2018): 395-399.

9. **Alia Al-Ghosoun**, Michael Herty, and Mohammed Seaid. **Numerical modeling of wave run-up in shallow water flows using moving wet/dry interfaces."** *International Journal of Mechanical and Mechatronics Engineering.* 11(2017):1757-1761.

Published

[\(Link\)](#)

Conferences:

1. Otham Alsmadi, Za'er Abo-Hammour, Dia Al-Nadi, and **Alia Al-Ghosoun**. **A novel genetic algorithm technique for solving university course timetabling problems."** *7th international workshop on systems, signal processing and their applications (WOSSPA), May, 2011, Algeria, 195-198.*

Published

[\(Link\)](#)

ATTENDED CONFERENCES AND WORKSHOPS

- The international conference on computational science, London, United Kingdom. **June, 2022**
- The annual conference for the UK association for Computational Mechanics, Nottingham, United Kingdom. **Apr, 2022**
- International conference on mechanical engineering and applied mechanics, London, United Kingdom. **Apr, 2020**
- International conference on mathematical and computational modelling, Granada (Spain) **Sep, 2019**
- 20th international conference on computational engineering and applications. Istanbul, Turkey. **Oct, 2018**
- 19th international conference on computational fluid dynamics. London, United Kingdom. **Oct, 2017**
- Capacity Building in Water and Renewable Energy Sectors Workshop, Amman, Jordan. **Dec, 2014**
- Water in the Arab World: Status, Challenges and Opportunities Conference (WAWCO), Amman, Jordan. **Feb, 2014**
- Global Conference for Renewable Energy and Energy Efficiency for Desert Regions (GCREEDER 2013), Amman, Jordan. **Sep, 2013**

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- Water, Energy and Climate Nexus Workshop, Amman, Jordan. **Jan, 2013**

AWARDS

- Best paper award, 20th international conference on computational engineering and applications, Istanbul, Turkey. **Oct, 2018**
- Best presentation award, department of engineering research day, Durham University, Durham, United Kingdom. **Oct, 2018**
- Best presentation award, 19th international conference on computational fluid dynamics, London, United Kingdom. **Oct, 2017**

TRAINING COURSES

- Vb.net programming language, Irth Academy, Amman- Jordan. **Oct, 2010**
- SQL-Server data base, Irth Academy, Amman- Jordan. **Sep, 2010**
- Oracle developer (10G), Irth Academy, Amman- Jordan. **Sep, 2010**
- 3D Max, Irth Academy, Amman- Jordan. **Aug, 2010**

RESEARCH EXPERIENCES & INTERESTES

- Solution of system of nonlinear equations.
- Numerical solution of initial and boundary value problems.
- Control system design (conventional and optimal).
- Continuous and discrete optimization problems.
- Discrete Genetic Algorithms.

MEMBERSHIP

- Jordan Engineers Association

LANGUAGES

- Arabic (Native), English (Fluent), French (Beginner).

REFERENCES

- Available upon request