MEHDI MAHMUD | web developer, Scientific Researcher

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PROFESSIONAL SUMMARY

Full-stack web developer and scientific researcher with a passion for coding and problem solving situated in Birmingham. As a skilled programmer, I can adapt to all stages of advanced programming. I am confident in my technical skills which range from coding and user interface to testing and debugging procedures and open to learning and expanding knowledge. I hold a Ph.D. in Applied Mathematics from the University of Birmingham. More recently, I completed an intense Full-Stack Web Developer Bootcamp at the University of Birmingham. I look forward to offering my skills as a Full-Stack web developer in the future as part of a fast-paced yet quality-driven team.

EXPERIENCE

09/2019 to 05/2021

Research Fellow
University of Birmingham - Birmingham, United Kingdom
In collaboration with the School of Dentistry, my main pieces of research involved improving the cavitation around ultrasonic dental scalers.

- Using ABAQUS and the finite element approach to conduct a numerical study for an ultrasonic dental scaler
- Developing a novel mathematical model to calculate the amount of cavitation near a dental implant. This model is now being used as a method of improving dental cleaning techniques
- Participating in teamwork by performing experiments in a lab environment. The lab results were used to compare and validate computational results
- Publishing an academic paper in Jove Scientific Journal

01/2015 to 09/2019

Teaching Assistant
University of Birmingham - Birmingham, United Kingdom
During my Ph.D. study in the school of Mathematics, I worked as a part-time teaching assistant.

- Assisting undergraduate students in their educational endeavours
- Developing their knowledge of several different mathematical fields: Numerical Analysis, Computational Mathematics using Maple, Mathematical Biology, C++ programming, and logic).
- Keeping up-to-date with upcoming topics so that I was able to answer any of the students' queries.
- Grading work and providing feedback
- Invigilating examinations

09/2009 to 09/2014

Lecturer and Undergraduate Administrator
University of Salahaddin/Erbil - Erbil, Iraq

Full-Time Assistant lecturer at Mathematics Department / College of Science to teach (Introduction to Cryptography, Matlab, Visual Basic, Advanced Calculus, Computational Mathematics, Numerical Analysis).

- As a Lecturer and Undergraduate Administrator, my role was to
- Organize timetables and examinations
- Provide lectures, educational resources, and advice for undergraduates
- Supervising final year students in their projects
- Building staff-student rapport

During my time at the university, I briefly took on the position of the Head of School for six months. This role allowed me to:

- Develop a firm understanding of the needs of both staff and students by offering advice, holding meetings, and solving any issues.
- Mediating inquiries between students and members of staff
- Manage and distribute financial resources
- Communicate with other schools within the University to organize research collaborations and conferences.
- Be an active member of the examination committee for the College of Science.

SKILLS

- JavaScript
- Express.Js
- Node.Js
- React
- Redux
- CSS
- HTML

- Responsive Design
- MongoDB
- Sequelize
- GraphQl
- Apollo Server
- JWT

- Rest API
- GitHub
- Abaqus
- adobe Premier
- Microsoft Office

WEBSITE, PORTFOLIO, PROFILE

Linkedin: https://www.linkedin.com/in/mehdi-mahmud
Portfolio: https://mehdimahmud79.github.io/portfolio
GitHub: https://github.com/MehdiMahmud79

PROJECTS:

- InQuisitive
  https://github.com/MehdiMahmud79/inQuizitive **|** https://uk-inquizitive.herokuapp.com/
  - **Summary**: Through a desire to retain that social interactivity, lots of communities went digital for their quizzing needs. One of the questions this raises is how do you go digital?InQuizitive was the conceptualised answer to this question.
  - **Role**: Senior Developer
  - **Tools**: Node.js, JavaScript, Express.js, Chart.js, React, GraphQl, JWT, Tailwind, Mongoose, Apollo-Server, API
- MovieTime
  https://github.com/MehdiMahmud79/Movie-Time **|** https://movietimeuk.herokuapp.com/

- **Summary:** We wanted to find a way to give our users a comfortable, streamlined, and efficient way to plan their movie night!
- **Role:** Senior Developer
- **Tools:** Node.js, JavaScript, Express.js, Sequelize, express sessions, Bootstrap, MySQL, cookies, API,

EDUCATION

2021

Bootcamp Certificate: Full-Stack Web Developer
University of Birmingham - Birmingham
Gained proficiency in front end and back end technologies through a dynamic full-stack curriculum, including HTML5, CSS3, JavaScript, jQuery, Bootstrap, Express.js, React.js, Node.js, Database Theory, JWT, MongoDB, MySQL, Git

2020

PhD: Applied Mathematics
University of Birmingham - Birmingham
Developed software to simulate Bubble Dynamics using parallel programming in Fortran language. The thesis title: "MICROBUBBLE DYNAMICS NEAR RIGID Boundaries"

2009

MSc: Applied Mathematics
University of Salahaddin/Erbil - Erbil
Developed a software to solve some types of integral equations using Matlab. "APPROXIMATION METHODS ON SOLVING A SYSTEM OF LINEAR 2D FREDHOLM INTEGRAL EQUATIONS

2000

BSc: Mathematics
University of Salahaddin/Erbil - Erbil
Produced a multi-language application using Visual Basic to secure text documents using some advanced cipher systems. " USING PRIMITIVE POLYNOMIALS IN BLOCK CIPHER TO CREATE A SECURE APP USING VISUAL BASIC" EXPERIENCE Research Fellow

LANGUAGES

English, Kurdish, Farsi, Arabic

TRAINING COURSES

- Academic Consultancy – One Day Workshop, University of Birmingham Enterprise Limited, 29th May 2019.
- Software Carpentry – Python, the workshop focused on Python and the curriculum will include: The Unix Shell, Version Control with Git, and Programming with Python, University of Birmingham, UK, 27th and 28th December 2018

- Mathematical Analysis of Incompressible Fluid Flows. A Sussex School and Workshop on the Navier-Stokes and Euler Equations. University of Sussex, Brighton, UK,18-22 September 2017.

PUBLICATIONS

- Wang, Q., Mahmud, M., Cui, J., Smith, W.R. and Walmsley, A.D., 2020. Numerical investigation of bubble dynamics at a corner. Physics of Fluids, 32(5), p.053306.
- Vyas, N., Mahmud, M., Wang, Q.X. and Walmsley, A.D., 2020. Imaging and Quantification of the Area of Fast-Moving Microbubbles Using a High-Speed Camera and Image Analysis. JoVE (Journal of Visualized Experiments), (163), p.e61509.
- Rostam K. Saeed and Mehdi H. Mahmud, Solution of a system of two-dimensional linear Fredholm integral equations of the second kind by quadrature methods, Australian Journal of Basic and Applied Sciences, Vol.3, No.3 (2009), 1701-1715.
- Mehdi H. Mahmud and Rostam K. Saeed, Numerical Solution of System of Two-DimensionalLinear Fredholm Integral Equations of the Second Kind by Adomian Decomposition Method, Proceeding of the 4th International scientific conference of Salahaddin University-Erbil, October 18-20, Vol.1 of 4 (2011), 31-34.fa