

Mehdi Mahmud

Full-Stack Web Developer

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<https://mehdimahmud79.github.io/portfolio/> 



ABOUT ME / OBJECTIVES

Full-stack developer with a passion for coding and problem solving situated in the Birmingham area. 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. I hold a PhD in Applied Mathematics from the University of Birmingham and since 2000 I have gained experience in several different domains which include research, teaching, IT, and professional video editing. More recently, I completed an intense Full-Stack Bootcamp at the University of Birmingham, which I completed in November 2021 having obtained an overall grade of A+.



EDUCATION

Bootcamp Certificate | University of Birmingham

MAY 2021-DEC 2021 **Full Stack web Development**

PhD | University of Birmingham

OCT 2015-JUL 2020 **Applied Mathematics**

"MICROBUBBLE DYNAMICS NEAR RIGID BOUNDARIES"

Msc | Salahaddin University-Erbil

OCT 2007 – JUL 2009 **Computational Mathematics**

"APPROXIMATION METHODS ON SOLVING A SYSTEM OF LINEAR 2D FREDHOLM INTEGRAL EQUATIONS"

Bsc | Salahaddin University-Erbil

OCT 1998 – JUL 2002 **GENERAL MATHEMATICS**

"USING PRIMITIVE POLYNOMIALS IN BLOCK CIPHER TO CREATE A SECURE APP USING VISUAL BASIC"



EXPERIENCE

Research Fellow | University of Birmingham

SEP 2019 – JUN 2021

Research project: Wall Effects on Dynamics of Cavitation Bubbles around a Dental Ultrasonic Scaler. Here, I used ABAQUS and the finite element approach to conduct a numerical study for an ultrasonic dental scaler.

Teaching Assistant | University of Birmingham

2015 – 2019

Teaching assistant- part time, during my PhD study in the school of Mathematics. I helped students in (Numerical Analysis, Computational Mathematics using Maple, Mathematical Biology, C++ programming and logic)

Assistant Lecturer and Undergraduate Administrator | University of Salahaddin-Erbil

2009 – 2014

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

Teaching Assistant | University of Salahaddin-Erbil

2003 – 2007

Full-Time Teaching assistant at Mathematics Department to help student with (Computer programming using visual Basic, advanced calculus, Computational Mathematics using Matlab, Cryptography systems, Latex Package)

IT and video editor

2000 – 2014

Part-Time professional video editor in Iraqia Tv, Zagros Tv and Gulan Tv based in Erbil city. Also as the head of the graphic department I taught my team in solving IT and technical related problems as well as professional video editing. I have used Adobe Premiere pro and Avid news cutter to edit news reports, tv shows and video clips.



SKILLS

Web Languages / Technologies used:

✓ HTML ✓ CSS ✓ JavaScript ✓ Express.js ✓ Node.js ✓ Sequelize ✓ MySQL
✓ React ✓ Tailwind ✓ Bootstraps ✓ JWT ✓ Jest ✓ MongoDB ✓ sequelize
✓ Jest ✓ GitHub ✓ Apollo Server

Other Languages

✓ Fortran ✓ Matlab ✓ Visual Basic

Other Skills

✓ Microsoft Office ✓ Adobe Premiere ✓ 3d Software (Abaqus)



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.



PERSONAL SKILLS

I am an innovative problem solver who can work effectively in a team. As a critical thinker, I enjoy solving technical challenges and building projects from ideation to execution. I am confident in both leading a project or working as part of a team which I demonstrated during my time studying for the Bootcamp. I am also able to learn and implement new technologies. My previous work as a research fellow highlights my ability to give great attention to detail in order to effectively produce high quality work. 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.



PROJECTS

Find all of my projects at: <https://mehdimahmud79.github.io/portfolio/>

- **InQuizitive**

Senior Developer (Developing the BackEnd and Manage the FrontEnd React Framework)

- **MovieTime**

Senior Developer (Developing the BackEnd and fixing the Problems in the FrontEnd)

- **HolidayPlanner**

Developer (WebPageStyling using tailwind and Api requests)



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 equation 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-Dimensional Linear 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.f.a



RESEARCH INTERESTS

- ❖ Bubble dynamics; Modeling Cavitation
- ❖ Boundary integral method
- ❖ Numerical Modeling; Computational Fluid Dynamics.

- ❖ Abaqus ; Modeling Cavitation around ultrasonic dental scaler.