

HUSSEIN MAHDI AL-RUBAIE

Research Engineer & Software Engineer

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ABOUT ME

I'm a research and software engineer with over [5] years of experience spanning web and mobile development, back-end systems, and applied AI. I've delivered [9]+ projects — for private clients, for government institutions, and as research prototypes — working across roles from full-stack and back-end development to software architecture. Alongside this, I write and teach: long-running technical series on Medium and Dev.to, and an educational platform, Learn with Era, followed by 19k learners. My research now focuses on efficient deep learning and complex networks.

EDUCATION

M.Sc. in Software Engineering — Artificial Intelligence specialization

University of Babylon, College of Information Technology · 2024 – 2026

- Ranked 1st in the taught-coursework year (2024–2025).
- Awarded a Ministry of Higher Education scholarship on the basis of academic performance.
- Thesis: Hierarchical Hypergraph Neural Networks for Multi-Type Drug–Drug Interaction Prediction. Supervisor: Dr. Sura Zaki Al-Rashid, Head of the Software Engineering Department.

B.Sc. in Software Engineering

University of Babylon, College of Information Technology · 2019 – 2023

- Graduated 2nd in cohort, GPA 87.84 / 100.
- Graduation project awarded a perfect score (100%).

EXPERIENCE

Founder & Research Engineer — Era Vision · 2020 – Present

- Research lab developing advanced, lightweight AI systems built on modern technologies and sciences.
- Delivered Era Vision's first system as a prototype: a cascaded hypergraph-based clinical decision support pipeline, presented at IAICT 2026.
- Lead R&D across software architecture, agent AI systems, explainable AI, computer vision, and graph neural networks.

Professional Software Engineer (Freelance) · 2023 – Present

- Delivered more than seven production projects for clients across web and mobile platforms.
- Commissioned to build competition-management systems for two university conferences: College of Mathematics, Al-Mustaqbal University (2025), and an extended version for the Department of Artificial Intelligence, College of Science (2026).

Software Engineer — Mid Back-end Engineer — Digital Logic · 2024

- Contributed to three government platforms serving public services across Iraq:
 - Bexy commercial-activity platform (employee management module),
 - National cooking-gas distribution and navigation system,
 - Centralized ticketing system deployed across company projects.

Full-Stack Developer — Al-Mustaqbal University · 2023 – 2024

- Built and maintained university web systems and administered the student registration system.

SKILLS

- Programming Languages:** Python · C# · Java · JavaScript · SQL · HTML / Tailwind CSS
- Frameworks:** PyTorch · .NET
- Engineering:** Software Engineering · Software Architecture · Application Development (Web, Mobile, Desktop) · System Design

RESEARCH INTERESTS

- Methods:** Mathematical Foundations of Deep Learning · Topological Deep Learning · Geometric Deep Learning · Complex & Higher-Order Networks · Efficient Deep Learning · Software Architecture
- Problem domains:** Bioinformatics · Computer Vision · Compressed Sensing · AI for Software Engineering · Explainable AI

LANGUAGES

Arabic (Native), English (Good - Written & Spoken)

PUBLICATIONS

1. Hierarchical Hypergraph Neural Networks for Multi-Type Drug-Drug Interaction Prediction. ECAI 2026 — International Conference on Electronics, Computers and Artificial Intelligence, Romania (IEEE Xplore). Published.
 2. A Cascaded Hypergraph Neural Network-Based Clinical Decision Support System for Drug-Drug Interaction Detection and Type Classification. IAICT 2026 — IEEE International Conference on Industry 4.0, AI and Communications Technology, Bali, Indonesia (IEEE Xplore). Published.
 3. Predicting Drug-Drug Interactions: A Comprehensive Review of Data, Methods, and Challenges. Kufa Journal of Engineering, University of Kufa. Published
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AWARDS & HONORS

1. Nominee, Iraqi Prime Minister's Award for Projects Funding — shortlisted from ~3,000 national submissions (2024).
 2. Ministry of Higher Education Scholarship — awarded for master's study on academic standing (2024).
 3. Ranked 1st, M.Sc. coursework year, University of Babylon (2025).
 4. Ranked 2nd in cohort, B.Sc., University of Babylon (2023).
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TEACHING & OUTREACH

1. **Technical Writer & Educator (2023 – Present)** — Author of long-running technical series on Medium, several featured in Medium publications: Mastering Pandas, The Math Behind Neural Networks, Graph Theory & High-Order Networks, and Software Engineering Philosophy. Also published on Dev.to and GoPenAI.
 2. **Founder & Educator, Learn with Era (2024 – Present)** — Educational platform on software development and AI, 19,000+ followers across YouTube, Instagram, and LinkedIn.
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