MUSTAFA ALI YAHYA ADAM

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PROFILE

Motivated Chemical Engineering Student with strong foundations in process design, simulation, and safety. Passionate about remote collaboration, global quality systems, and sustainable industrial innovation. Skilled in combining engineering and programming to deliver impactful, tech-driven solutions. Experienced in biochemical simulations, pipeline design, and digital tools.

PROJECTS & EXPERIENCE

(All projects are published with full documentation at GitHub)

Syngas Production Process Design ***University Project – Feb – June 2025***

- Designed a sustainable synthetic gas production process using MATLAB, Excel, and SolidWorks.
- Applied thermodynamic and reaction engineering principles for optimization.
- Focused on reaction control, feedstock selection, and catalyst use.

Sharbot Fermentation Lifecycle Simulation – MATLAB & Simulink - ***Independent Research - May – July 2025***

- Developed a full biochemical lifecycle model in MATLAB Simulink simulating the transformation of sugar into ethanol and vinegar.
- Modeled yeast and acetic acid bacteria dynamics, including biomass growth, ethanol production**,** acetic acid formation, CO_2 release, and pH inhibition.
- Designed logic to switch between anaerobic - aerobic fermentation stages.
- Applications include sustainable food production, vinegar design, and bioethanol studies

Petrol Refinery Pipeline Diameter Design ***University Project – May 2024***

- Optimized pipeline system using Excel, C++, and SolidWorks.
- Applied fluid mechanics and energy efficiency calculations.

English Language Club Coordinator – Sudan ***English Discussion Center (EDC) – Oct– Nov 2022***

- Led weekly English sessions; improved students' speaking and comprehension and managed club activities.

Batch Reactor Simulation – A → B → C Modeling ***University Project* – June 2025**

- Simulated a series reaction mechanism (A → B → C) using MATLAB and Simulink.
- Modeled concentration profiles and time-dependent behavior for batch reactor operation.
- Applied reaction kinetics**,** ODE solving, and visualization of dynamic systems.

EDUCATION

Bolu Abant Izzet Baysal University – Bolu, Turkey

- Bachelor of Science in Chemical Engineering
- *Expected Graduation:* December 2026

University of the People

- Bachelor of Business Management (Distance Education)
- *Expected Graduation:* December 2028

SAFETY & PROFESSIONAL TRAINING

SAFETY

- ELA901 – Chemical Process Safety – Fundamentals
- ELA902 – Runaway Reactions
- ELA951 – Hazard Recognition
- ELA952 – Identifying & Minimizing Hazards
- ELA962 – Chemical Reactivity Hazards

All completed May–June 2025

Software & management TRAINING

- Software Engineering in C++ – Programming Advice
  (Self-learning expected to complete the 24-course roadmap by Feb 2026)
- Management – Management Doses (Self learning In Progress up to April 2026)

CERTIFICATES

- Foundations of Project Management – Coursera / Google, 2024
- Microsoft Office 365 – Coursera Project Network, 2024
- Foundations of User Experience (UX) – Coursera / Google, 2025
- Programming with Python – Coursera / University of Michigan, 2024
- HTML – Coursera / University of Michigan, 2024
- Introduction to CSS – Coursera / University of Michigan, 2024
- C++ (Algorithm Design Course [1 -5]) – Programming Advice
  Expected to be completed by Feb 2026

LANGUAGES

- Arabic – Native
- English – Fluent
- Turkish – Intermediate

SKILLS

Technical skills

- **Programming:** Python, C++, HTML, CSS
- **Simulation & Design:** MATLAB, Simulink, SolidWorks, Excel
- **Web Tools:** Streamlit, Flask (in progress Self learning – by Oct 2025), Figma
- **Engineering Fields:** Thermodynamics, Reaction Engineering, Heat & Mass Transfer, Fluid Mechanics

Soft Skills:

- Leadership,
- Time Management
- Critical Thinking,
- Collaboration