

# ANWAR GHAMMAM

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## EDUCATION

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Oakland University | Rochester, MI, USA

**Ph.D.** in Computer Science & Information 09-2021- 04-2025

Oakland University | Rochester, MI, USA

**Master's** in Computer Science & Information 09-2021 - 12/2022

National Institute of Applied Science And Technology (INSAT) | Tunis, Tunisia

**Bachelor in Software Engineering Degree** 09/2016 - 06/2021

## RESEARCH INTEREST

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AI4SE, Software Engineering, Artificial Intelligence, Intelligent Systems, Software Containers, Refactoring and Software quality.

## PUBLICATIONS

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- James Ivers, Anwar Ghammam, Khoulood Gaaloul, Ipek Ozkaya, Marouane Kessentini and Wajdi Aljedaani [Mind the Gap: The Disconnect Between Refactoring Criteria Used in Industry and Refactoring Recommendation Tools](#). The International Conference on Software Maintenance and Evolution (ICSME 2024) [Class A]- Status: **Published**
- Anwar Ghammam, Rania khalsi, Marouane Kessentini, Foyzul Hassan: [Efficient Management of Containers for Software Defined Vehicles](#), IEEE Transactions on Software Engineering And Methodology, (TOESM-24) [Q1 IF 6.6] - Status: **Published**
- Wajdi Aljedaani, Anwar Ghammam, Mohamed Wiem Mkaouer, Marouane Kessentini: [From Boring to Boarding: Transforming Refactoring Education with Game-Based Learning](#). ICSE Games and Software Engineering (GAZ)- Status: **Published**
- Anwar Ghammam, T Ferreira, Wajdi Aljedaani, Marouane Kessentini, Ali Husain: [Dynamic Software Containers Workload Balancing via Many-Objective Search](#), IEEE Transactions on Services Computing Journal (TSC-22) [Q1 IF 5.5] - Status: **Published**
- Build Code Needs Maintenance Too: A Study on Refactoring and Technical Debt in Build Systems, International conference on Mining Software Repositories (MSR 25) - Status: **Published**
- About the relation between software Context and refactoring (Submitted to TSE 25 - Under Review)

## AWARDS AND DISTINCTIONS

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- 2025 – **MODELS**: Virtualization Chair Committee Member
- 2024 – **NSF I-Corps Program**: Selected to attend the National NSF I-Corps training program as an Entrepreneurial Lead
- 2022–2023 – **CSE OU Graduate Research Competition**: Best Research Quality/Presentation Award
- 2022 – **ASE**: Organizing Committee Member (Web Co-Chair)
- 2022 – **Industry-University Center on Pervasive AI Event**: Most Industry-Ready Research Award (among projects presented by CU Boulder, Oregon State University, and Oakland University)
- 2022 – **Recipient of NSF Student Intern Scholarship**

## WORK EXPERIENCE

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University of Michigan-Dearborn | MI  
**Assistant Professor**  
09/2025 - Current

- Conducting Research UM-Dearborn.
- Leading NeoSE Lab
- Teaching

Oakland University | MI  
**Graduate Assistant**  
09/2022 - Current

- Work under Dr. Marouane Kessentini, Dean of the College of Computing, Grand Valley State University).

UM-Flint REU Site | MI  
**Mentor**  
05/2024 - 07/2024

- Apply AI, ML, and LLMs to build Intelligent Software in different areas such as Software Containers, Software refactoring, and Software Quality.
- Work under Dr. Marouane Kessentini, Dean of the College of Computing, Grand Valley State University).
- Contributing author on 2 research papers with faculty from different universities (Oakland university, University of Michigan, Carnegie Mellon University).
- Contributing author on 2 research papers in collaboration with industry ( Ford Motor Company)

Ford Motor Company | MI  
**Artificial Intelligence Intern**  
05/2024 - 07/2024

- Mentored an undergraduate student who was conducting research on the application of LLM to identify build code refactoring. Additionally, I supported the student through the critical components of research and established explicit objectives and methodologies for resolving the proposed research problem.
- Worked on Ford vehicles' Workshop Manual Assistant using Retrieval Augmented Generation (RAG) to assist technicians and answer their questions.
- Applied different research papers approaches to evaluate the RAG model.

Instadeep | Boston, USA  
**NSF Student Intern**  
05/2022 - 09/2022

- Worked on a PCB grid using multi-objective Reinforcement Learning.

UM-Dearborn AI Research Center  
Dearborn, Michigan  
**Graduate Assistant**  
07/2020 - 05/2022

- Worked on a Dynamic workload balancer for Docker containers in smart and connected vehicles using Multi-Objective Optimization Algorithms. (In collaboration with FORD Motor Company)

Smart Team | Tunis, Tunisia  
**Artificial Intelligence Intern**  
05/2020 - 06/2020

- Worked on a CV analyzer tool: Automatic extraction of Information in Resumes and selection of the most matching resumes to a post description using (using Entity Recognition (NER, TFIDF and Cosine Similarity)

Intelligent Software Engineering Lab,  
UoM-Dearborn  
**Research Assistant**  
03/2020 - 05/2020

- Built and trained machine learning models to forecast how code refactoring may affect code smells and the emergence of defects in software projects.

## TEACHING EXPERIENCE

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### Course Instructor

Winter 2024/ Fall 2024

CSI 4160/5160 - Integrated Computing Systems, **Oakland University**

### Teaching Assistant

Winter 2023/ Fall 2023

CSI 3380 - Game Design  
CSI 3500 - Human Computer Interaction  
CSI 3610 - Design and Analysis of Algorithm  
**Oakland University**

### Lab Instructor

Winter 2022

CSI 3600 - Software Engineering, **University-Dearborn.**

## Technical Skills

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### Web Development:

- **Programming Languages:** Java, Javascript
- **Libraries and Frameworks:** MEAN (MongoDB, Express.js, Angular, Node.js), MERN (MongoDB, Express.js, React, Node.js), Bootstrap, Spring Boot

### Software Engineering Practices:

- In-depth knowledge of SQL/NoSQL, UML Design, CI/CD pipelines, Unit Testing, and adherence to code quality practices (including code refactoring, and static code analysis).
- Understanding and application of principles for building extensible and scalable architectures, including the use of microservices, containerization (e.g., Docker), and orchestration tools (e.g., Kubernetes).

### AI & Machine Learning Application:

- **Programming Languages:** Python, C/C++
- **Libraries and Frameworks:** Hands-on experience with Sklearn, Pandas, Matplotlib, Torch, TensorFlow, and Keras.
- **LLMs & NLP:** LLMs like GPT and BERT, Prompt Engineering.

## CERTIFICATIONS

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- **PCAP Certification** | Python Institute
- **Machine Learning Certificate:** Coursera
- **Neural Networks and Deep Learning Certificate:** Coursera
- **Natural Language Processing with Classification and Vector Spaces:** Coursera
- **Improving Deep Neural Networks:** Hyperparameter tuning, Regularization, and Optimization Certificate: Coursera
- **Convolutional Neural Networks Certificate:** Coursera
- **Improving Deep Neural Networks Certificate:** Hyperparameter tuning, Regularization, and Optimization: Coursera
- **Sequence Models Certificate:** Coursera
- **Improving Deep Neural Networks Certificate:** Coursera
- **Natural Language Processing in TensorFlow:** Coursera
- **Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning:** Coursera