

ANWAR GHAMMAM

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EDUCATION

Oakland University | Rochester, MI, USA
Ph.D. in Computer Science & Information
09-2021- 04-2024

Oakland University | Rochester, MI, USA
Master's in Computer And Information Sciences
09-2021 - 12/2022

National Institute of Applied Science And Technology (INSAT) | Tunis, Tunisia, Tunisia
Software Engineering Degree
09/2016 - 06/2021

EXPERIENCE

Ford Motor Company
Machine Learning Intern
05/2024 - 07/2024

- Work on Ford vehicles' Workshop Manual Assistant using Retrieval Augmented Generation (RAG) to assist technicians and answer their questions.

Oakland University | MI
Research Assistant & Instructor
09/2022 - Current

- 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).
- Teach Graduate courses (Integrated Computing Systems course CSI 4160/5160 including Web services, Cloud, Databases, containerization, and Orchestration tools (Docker, Kubernetes).

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

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

UM-Dearborn (AI Research Center) |
Dearborn, Michigan
Research 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)
- Worked on an automatic software refactoring detection tool based on software quality metrics and code smells detection.

ISE Lab, University of Michigan-Dearborn
& INSAT | Tunis, Tunisia
Student Researcher in AI 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.

Technical Skills

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

- **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

PUBLICATIONS

- **Dynamic Software Containers Workload Balancing via Many-Objective Search**, IEEE Transactions on Services Computing Journal (TSC-22) - Status: **Accepted**
- **Efficient Management of Containers for Software Defined Vehicles**, IEEE Transactions on Software Engineering And Methodology, Journal 24 - Status: **Accepted**
- **From Boring to Boarding: Transforming Refactoring Education with Game-Based Learning**, The International Conference on Software Engineering 2024 - Status: **Accepted**
- **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)- Status: **Accepted**
- **An Empirical Study of Refactorings and Technical Debt in Build Systems**, MSR-24 Status: **Submitted**

AWARDS AND DISTINCTIONS

- **NSF I-Corps Program:** Our team received NSF funds and I was selected to attend the National NSF I-Corps training as an entrepreneurial lead.
- **ASE 2022, MI, USA:** Worked as a committee member (Web Chair)
- **2022-2023 CSE Graduate Research Competition:** Received the Best Research Quality/Presentation Award.
- **Industry-University Center on Pervasive AI event, Portland:** Received the most industry-ready research award among many projects presented by CU Boulder University, Oregon State University, and Oakland University.