

Feras-Ra'ed

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📍 Amman, Jordan

Research Interests

I am broadly interested in Machine Learning, Graph Representations, their intersection, Deep Learning, Efficiency of Machine Learning Models, Algorithms, Programming Languages, Natural language processing, Meta-Learning and Computer Vision.

Education

Feb '19 – Sep '22

Jordan University of Science and Technology JUST

B.Sc. Electrical Engineering (Communications), Minor in Computer Science, (Accelerated Degree)

- Advisors: Ahmad Abu-El-Haija and Mahmoud Al-Ayyoub
- Thesis: Automatic detection of covert timing channels using Image Processing and Machine Learning
- Honors: Chairman Award for Best Undergraduate Thesis (Spring 2022), Walid A. Shahab Award. Rank 1 out of 90 engineering freshmen in EE320: Electronic Circuits Course (Summer 2020), National Scholarship (top 2% of high schools)
- Teaching: Course Assistant for Digital Communications and Programming in C++
- Relevant Courses: Linear Systems Theory, Random Signal Analysis, Digital Signal Processing, Digital Communications. Additional Courses at CS Department: Object-Oriented Software Modeling, Advanced Topics in Programming, Analysis and Design of Algorithms

Sep '16 – Feb '19

Jordan University of Science and Technology JUST

First and Second Years - Architecture

- Major GPA: 3.89/4.0, Rank: 2/80
- Advisor: Hussain Alzoubi
- Honors: Ranked 2nd Among Student Design Projects for ARCH 111: Basic Design (1) Course, National Scholarship (top 2% of high schools)
- Transferred to Faculty of Engineering after Second Year to Pursue Education in Electrical Engineering

Sep '11 – Jun '16

Pioneer Educational High School for Science and Technology

Pick Up the Best Student at High School

- GPA: 95.5/100, Rank: 1st (top 2% nationwide)
- Relevant Courses: Deep Classes in Mathematics, Physics, and Basics of Algorithms
- Start Coding at this School (age 14)

Selected Experience

Jun '21 – Sep '21

EPFL (École polytechnique fédérale de Lausanne)

Research Summer Intern - Theory of Machine Learning lab

- Advisor: Nicolas Flammarion
- Implementation of optimization model agnostic algorithms for Meta-Learning
- Studying the robustness of machine learning models to small, worst-case changes in the inputs
- Funded by Erasmus +
- Keywords: Meta-Learning, Adversarial robustness

Sep '22 – Present

Microsoft - Amman

Machine Learning Intern

- Developing Unsupervised Graph Representation Algorithms: Node embeddings; learning deep edge functions
- Keywords: Machine Learning on Graphs

Feb '20 – Sep '22

JUST Information and Communication Group - Machine Learning in Healthcare lab

Undergraduate Researcher

- Advisors: Mahmoud Al-Ayyoub and Ahmad Abu-El-Haija
- We developed methods for Diagnosis a lot of cases using Machine Learning and 3D Modeling – specifically Breast Cancer, Lumbar Disk Herniation, Brain Tumor, Sinus Diseases

	<ul style="list-style-type: none"> • Optimization of algorithms for Natural Language and Human Activity Recognition • Keywords: Machine Learning in Healthcare
Jun '22 – Sep '22	Specto Ltd <i>Machine Learning Intern</i> <ul style="list-style-type: none"> • Advisor: Ahmad Abu-El-Haija • Building machine learning and deep learning models on Google cloud platform • Development of fast and energy efficient algorithms for specialized computer architecture • Keywords: Self-Supervised Learning, Program Synthesis

Teaching Experience

Spring '21	CS Department of JUST - Teaching Assistant for Programming in C++ (CS115) <ul style="list-style-type: none"> • Developed problem set and exam questions • Taught weekly tutorial problem-solving sessions to small student groups
Fall '22	EE Department of JUST - Teaching Assistant for Digital Communications (EE551) <ul style="list-style-type: none"> • Taught weekly tutorial problem-solving sessions to small student groups
Nov '20 – Aug '21	Focus Academy – Tutor for Signal & Systems (EE260), Electromagnetic (EE207), Physics (PHY102)

Honors & Awards

2021		Erasmus+ - Scholarship of the Jordan Academic Exchange
2022		EE Department of JUST - Chairman Award for Undergraduate Research Excellence (Best Undergraduate Thesis)
2021		EE Department of JUST - Walid A. Shahab Award. Rank 1 out of 90 engineering freshmen in EE320
2021		Saudi Federation for Cyber Security and Programming (SAFCSP) - 2nd place in @Hack CTF
16 - 22		EE and ARCH Departments of JUST - National Scholarship

presentations

Aug '21		Association of Arab Universities Webinar - Presenter for "Information Technology and the Future" [Slides]
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Skills

- **Technical:** C++, Python, TensorFlow, Pytorch, Theano, Javascript, Java, C#, Objective-C, Matlab, Android, Kotlin
- **Design:** Unity, Unreal Engine, Photoshop, Microcontrollers, Illustrator
- **Languages:** English and Arabic (Proficient), French (Elementary proficiency)
- **Extra-curricular Interests:** Outdoor sports (esp. biking, soccer, running, swimming, snowboarding), Math brain-teasers and Algorithms, Board games and Traveling

Leadership, Club Activities & Volunteer Experience

Oct '20 – Oct '21	IEEE Computer Society Student Chapter - Chairman <ul style="list-style-type: none"> • Hold 5-week Artificial Intelligence and Machine Learning Courses for the freshman engineering majors in JUST University • Organized Techno-Date which brings together students and tech startups. During the event students had the chance to listen-up numerous start-up journeys
Jul '19 – Jul '22	JUST Programming Chapter - JPC - Chairman <ul style="list-style-type: none"> • Taught JUST students problem-solving, algorithms, data structures, and math in multiple trainings, +350 attended the trainings • Trained JUST students taking part in National and International Programming Competitions
Oct '20 – Oct '21	Eye On The Future_Live Your Dream - Volunteer <ul style="list-style-type: none"> • Organized a classrooms across the country to help educate students about research in computer science and career options as a quantitative scientist • Supported teachers in the best high schools by mentoring students and providing yearlong technical support on web development projects

Jul '19 – Jul '22

IEEE Student Branch - Board Member

- Organized 17th IEEE Jordan Student & Young Professional Congress in 2019 with 200 IEEE members in Jordanian Universities
- With a group of volunteering peers, we organized “Eye On The Future” which is a one-week comprehensive event for students interested in technology enterprises and startups, including seminars, workshops and entertainment