

# Feras-Ra'ed

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📍 Amman, Jordan

## Research Interests

I'm interested in Machine and Deep Learning, Statistical Machine Learning Theory, Data Mining, Programming Languages and Natural Language Processing.

## 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<sup>nd</sup>
- Advisor: Hussain Alzoubi
- Honors: Ranked 2<sup>nd</sup> 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: 1<sup>st</sup> (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

*Research Intern - Deep Learning Group*

- Developing Unsupervised Graph Representation Algorithms: Node embeddings; learning deep edge functions
- Keywords: Data Mining, Statistical Machine Learning

Feb '20 – Sep '22

### JUST Information and Communication Group

*Undergraduate Researcher - Machine Learning in Healthcare Lab*

- Advisors: Mahmoud Al-Ayyoub and Ahmad Abu-El-Haija

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- 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
- Optimization of algorithms for Natural Language and Human Activity Recognition
- Keywords: Machine Learning in Healthcare

Jun '22 – Sep '22

### **Specto Ltd**

*Machine Learning Intern*

- 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)**

- 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)**

- 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) - 2<sup>nd</sup> Place in @Hack CTF**

16 - 22 | **EE and ARCH Departments of JUST - National Scholarship**

## **presentations**

Aug '22 | **Association of Arab Universities Webinar - Presenter for "Information Technology and the Future" [Slides]**

## **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**

- 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**

- 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**

NOV 10, 2022

- 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