

# Feras-Ra'ed

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📍 Amman, Jordan

## Research Interests

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

## Education

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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

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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 Association Rule & Frequent Itemset Mining Algorithms; FP-growth mining algorithm
- Keywords: Statistical Machine Learning, Data Mining

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

## Teaching Experience

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

## Honors & Awards

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

## presentations

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Aug '22		<b>Association of Arab Universities Webinar</b> - <i>Presenter for "Information Technology and the Future" <a href="#">[Slides]</a></i>
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## Skills

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- **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

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

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