1 Personal Information

Last Name:	Fraihat
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2 Education

February 2007 March 2010	**Ph.D. Computer Science**, AIX-Marseille University, France (Shanghai ranking 101-150), mention: Very Honorable distinction with unanimous congratulations from the jury.
September 2004 July 2005	**M.Sc. Information Science and Systems**, AIX-Marseille University, France, mention: Very Good.
September 1998 August 2004	**B.Sc. Computer Engineering**, National High School of Informatics (ESI), Algiers, Algeria, mention: Very Good.

3 Professional Experiences

August 2021 – Present	**Associate Professor** in Data Analytics, Information Technology department, College of Engineering & IT, Ajman University, UAE
September 2019- August 2020	**Head of the Department of Computer Science** (ABET Accredited), The department offers PhD in Computer Science, Masters in Computer Science, Masters in Information Systems Security and Digital Criminology, Bachelors in Computer Science. **Founder of the Department of Data Science,** The department offers Masters in Data Science, and Bachelors in Artificial Intelligence and Data Science. At King Hussein School of Computing Sciences, Princess Sumaya University for Technology PSUT (The First Technology University in Jordan, 42nd in QS Arab Region University Rankings), Amman, Jordan I led a team of 25 Faculty, 7 Lab Supervisors, and 15 Teaching Assistants.
September 2018 Present	**Department of Computer Science and Data Science**, King Hussein School of Computing Sciences, Princess Sumaya University for Technology PSUT, Amman, Jordan.
November 2017 - August 2018	**Head of Software Engineering Department**, Information Technologies Faculty, Al-Ahliyyah Amman University, Amman, Jordan
October 2017	**Associate Professor** in Computer Science, Information Technologies Faculty, Al-Ahliyyah Amman University, Amman, Jordan
September 2012 - October 2017	**Assistant Professor** in Computer Science, Information Technologies Faculty, Al-Ahliyyah Amman University, Amman, Jordan
September 2010 - August 2012	**Faculty member** in Information Technologies Faculty, UTEC (University of Technology Teaching consular), Ministry of Industry, France.
September 2008 - August 2010	**Teaching and Research Assistant** in Information Technologies Faculty, Aix-Marseille University and Toulon University.
February 2007 - August 2008	**Research Engineer, CNRS** - The National Center for Scientific Research, The largest governmental research organisation in France
February 2006 - August 2007	**Part-time Teacher** in Information Technologies Faculty, Aix-Marseille University.

4 Highlights

- External reviewer/examiner with the Higher Education Accreditation Commission (HEAC) in Jordan. Reviewed several AI and Data Science programs
- Curriculum design and deployment at Bachelors and Masters levels
- Head of Quality Assurance Committee in the Department of Data Science

- Member of the Technical Committee of the Cooperative Higher Education Conference 2020 organized by German Corporation for International Cooperation (GIZ)
- ABET Accreditation Committee, PSUT, Jordan 2019-2018
- Designed the Data Science undergraduate program in 2019
- Establishment of Computer Science and Data Science Bachelors Dual degree between Princess Sumaya University for Technology and Colorado State University in 2019
- Designed the Data Science course for graduate program.
- Technical Committee member of the ICTCS2019 conference (Scopus)
- ABET Accreditation Committee member, Al-Ahliyya Amman University (AAU), Jordan 2017.

5 Research activities

5.1 Supervision:
- **Co-Supervisor of Computer Science PhD Thesis**:
  - MS. Bushra Hijawi: Multi-Objectives Personalized Collaborative Filtering Recommender Systems using Inheritance and Graph based Models. (since Sept 2020, PSUT).
- **Supervisor of Data Science Master Thesis**:
  - Mr. Ahmad Alqam 2021: Data Compression Using Deep Learning Techniques.
  - Ms. Eman Alnagi 2021: English-Arabic Machine Translation Using Auto-Encoder Model.
  - Ms. Bushra Abu Tahoun 2021: Recommendation Approach Using Multimodal AutoEncoder.
  - Ms. Malak Fraihat 2020: New Clustering Approach to Predict the Best Customer Offer.
  - Ms. Razan Alomoush 2020: Implementation of BI Framework for a Global Online Retail.
  - Mr Ali Hasoun 2019: A Framework of Business Intelligence Solution for Real Estates Analysis.
  - Ms. Layanah Wreikat 2019: Data Analytics System for Mobile Money process.
- External and Internal Examiner for several PhD/ Masters theses in Jordan and Masters theses in France.

5.2 Publications

Date	Research Title	Journal Title	Author	Edition/ Pages
2022	Survey on the Objectives of Recommender System: Measures, Solutions, Evaluation Methodology, and New Perspectives	ACM Computing Surveys **ISI IF: 10.282 Q1***	B, Alhijawi. A, Awajan. S, Fraihat	Accepted
2022	An efficient enhanced k-means clustering algorithm for best offer prediction in telecom	International Journal of Electrical and Computer Engineering (IJECE). **(Scopus Q2)**	M, Fraihat. S, Fraihat. M, Awad, M, AlKasassbeh	(13)2 1-16
2021	Cyber threat intelligence using PCA-DNN model to detect abnormal network behavior	Egyptian Informatics Journal **ISI IF: 3.943 Q1***	M, Al-Fawa'reh. M, AlFayoumi. S, Nashwan. S, Fraihat	1110-8665
2021	Meteorological data analytic system: Descriptive and predictive analysis	Journal of Theoretical and Applied Information Technology **(Scopus)**	D, Shahin, M, Awad, S, Fraihat	(99)14 3503-3516
2021	Survey on the Objectives of Recommender System: Measures, Solutions, Evaluation Methodology, and New Perspectives	ACM Computing Surveys **ISI IF: 7.9**	B.Alhijawi, A.Awajan, S.Fraihat	Accepted
2021	Business Intelligence Framework Design & Implementation - A Real Estate Market Case Study	ACM Journal of Data and Information Quality **(Scopus Q2)**	S. Fraihat, W. Salameh, A. Elhassan, B. Abutahoun, M.Alasasfeh	Accepted
2020	Telecom Big Data: Social Media Sentiment Analysis	International Journal of Advanced Trends in Computer Science and Engineering **(Scopus)**	S.Fraihat, M.Momani, M.Fraihat, M.Awad	(4)9 4322 – 4327
2020	Business Intelligence & Data Analytics Framework: Case Study of Humanitarian Organizations Refugees Registration System	International Journal of Innovative Computing and Applications **(Scopus Q3)**	Ballout, A. Al Hasan, M. Fraihat, S. Elhassan. A	In press

Year	Title	Venue	Authors	Pages/No.
2019	Business Intelligence and Data Analytics System for Mobile Money	The International Conference on Data Science, E-learning and Information Systems 2019,ACM (**Scopus**)	L.Al-Wreikat, A. Alshawa, D. Rimawi and S.Fraihat	No.: 38 Pages 1–6
2019	A Framework of Business Intelligence Solution for Real Estates Analysis	The International Conference on Data Science, E-learning and Information Systems 2019, ACM (**Scopus**)	B. Abutahoun, M.Alasasfeh and S. Fraihat	No.: 39 Pages 1–9
2019	Data Analytics and Business Intelligence Framework for Stock Market Trading	the International Conference on New Trends in Computing Sciences (ICTCS 2019), IEEE (**Scopus**)	B.Alarmouty, S.Fraihat	DOI: 10.1109/ICTCS.2019.8923059
2018	The Implementation of Mobile Technologies in Higher Education: A Mobile Application for University Course Advising	Journal of Internet Technology (JIT) **ISI Impact factor: 1.301**	Shambour, Q. Fraihat, S. Hourani, M	(5) 19 1327-1337
2016	Ontology-Concepts Weighting for Enhanced Semantic Classification of Documents	International Journal of Innovative Computing, Information and Control (IJICIC) (**Scopus Q1. ESCI**)	Fraihat, S	(12)2 519-531
2016	An Item-based Multi-Criteria Collaborative Filtering Algorithm for Personalized Recommender Systems	International Journal of Advanced Computer Science and Applications (IJACSA) (**Scopus Q3. ESCI**)	Shambour, Q. Hourani, M Fraihat, S.	(7)8/ - 274 279
2016	A Semantic Multi-Agent Architecture for Multilingual Machine Translation	International Journal of Computer Science and Information Security (IJCSIS) (**ESCI**).	Fraihat, S Shambour, Q. Hourani, M	(7)14 624 - 635
2015	A Framework of Semantic Recommender System for e-Learning	Journal of Software (JSW) (**ERA rank B**)	Fraihat, S Shambour, Q..	(3)10/- 317 330
2013	New Semantic Indexing and Search System Based on Ontology	Fourth International Conference on Emerging Intelligent Data and Web Technologies (EIDWT)	Fraihat, S	-313 318
2010	Indexation rapide de documents audio par traitement morphologique de la parole	Ingénierie des systèmes d'information - Lavoisier	Fraihat, S Glotin, H	/(2)15 29-48
2009	Towards Image Processing Compact Vowels Coding.	The 5th International Conference Sciences of Electronic, Technologies of Information and Telecom (SETIT)	Fraihat, S Glotin, H	64-61
2008	New Time-Frequency quantization for parsimonious speech coding.	IEEE International conference on Signal Processing and Multimedia Applications (SIGMAP)	Fraihat, S Glotin, H	192-189
2008	Parsimonious Time-Frequency Quantization for Phoneme and Speaker classification	Canadian Conference on Electrical and Computer Engineering (CCECE) - Signal and Multimedia Processing	Fraihat, S Glotin, H	-1531 1534
2008	" Adaptive Resonance Theory": L'ordre de résentation des mots compte-t-il?	Second French conference on Computational Neuroscience	Fraihat, S Glotin, H	172-167
2008	ART2 et apprentissage de séquences de mots: l'ordre compte	Second French conference on Computational Neuroscience	Fraihat, S Glotin, H	-252 258

5.3   Skills

- Deep/Machine Learning/Data mining: Classification, Clustering, Regression. Data Engineering.
- Libraries: Scikit, Keras, Numpy, Tensorflow, pyTorch. Anaconda, Jupyter. Azure ML. Power BI.
- HDFS, HBase, NoSql, Sql Database.
- Programming languages: Python, Matlab, C/C++, Java.
- Big Data: Hadoop and Spark using Docker. Kafka, SparkML.
- Object modeling (With UML) of information systems.

5.4 Research Interest

- Artificial Intelligence.
- Machine Learning and Deep learning
- Data Engineering/Data mining (Big Data, Data Analytics)
- Data modeling / Business Intelligence

5.5 Participation in Research Projects and Funds

since – Feb. 2021 Jordan	**Orange Jordan x PSUT AI Startup Incubator project:** I am the project manager of this project. The aims of this project are Enhance and Develop National Incubators and/or Accelerators for Entrepreneurs, Management Teams, and Start Ups; The design, management and implementation of the AI incubator's startups skills development Bootcamp program.
since – Sep. 2020 Jordan	**ESCWA project:** I am member of the Council for the Orientation of Development and Ethics (CODE). The aim of the project is leveraging Big Data and Alternative Data Sources to Respond to Crises and Disasters in Lebanon and Jordan.
Feb. 2020 – Sep. 2020 Jordan	**COVID19 Project:** The project aims to provide a complete solution to understand and analyze the behavior of the epidemic and predict its progress, in order to provide decision-makers with a real view to make the right decision at the right time. In other hand, elaborate a Data analytic system to use the Jordanian government data in order to study the effect of Covid-19 confinement measures, and understand changes in necessary trips that can form recommendations on business hours.
June. 2019 – Sep. 2021 Jordan	**Dual Studies DS Programs Project (Fund received by PSUT: 250k Euro):** I am the PSUT manager of the DS project. The project is financed by the German development agency GIZ. The objective of this project is to support and secure the necessary preparations for the implementation of dual/cooperative studies at PSUT to systematically introduce students to real-life work conditions already during their studies and to develop of new quality of cooperation between universities and enterprises.
Sep 2017 – August 2020 Jordan	**JOVITAL Project. (200,000Euro).** This is an EU funded project that offers Higher Education Institutions (HEIs) in Jordan the possibility to explore, implement, and disseminate state of the art academic practices in e-learning and virtual learning to enhance teaching quality and improve learning outcomes.
Sep. 2008 – Sep. 2009 France	**National Project EVALDA/ESTERE2 (500K euros).** Evaluation of broadcast automatic transcription systems. This prject is organized by the Directorate General for Armament and the Francophone Association of Speech Communication, with support from ELDA (Evaluations and Language resources Distribution Agency).
Sep. 2007 – Sep. 2009 France	**Computational Modeling of learning written words Project (1M euros).** Cognitive Sciences (Neurobiology of perception, reasoning and learning). This project financed by the National Agency for Research ANCL 2007-2009.

5.6 Scholarship

- Aix Marseille University (France) Scholarship from Sept-2006 to August-2009 (≈ 55k euro).

6   Teaching Activities

Year, status and Establishment	Title	Public
Since August 2021, Ajman University	Data Engineering, Programing to Data Analytics, Data visualization, Operating System.	Data Analytic Bachelor degree
Since September 2018 Princess Sumaya University for Technology (PSUT), Jordan	**New courses I have created:** Data Engineering/ Business Intelligence and Data Warehousing/Data Science for Business modeling.	Data Science Master
	Algorithm Design and Analysis, Data Structures, Object-oriented programming, Structured Programming, Introduction to computer science, and Introduction to Data Science	Computer science Bachelor's degree
Associate /Assistant Professor September 2012 – August 2018 Amman Al-Ahliyyah	Hadoop and big Data, Image processing, Multimedia System, Algorithms Design and Analysis, Object oriented, Software Engineering. **New courses I have redesigned:** Introduction to Software Engineering, Software Design and Architecture,	Bachelor's degree

University, Jordan	Software Construction and Documentation.	
Faculty member September 2010 –August 2012, France **UTEC University of Technology Teaching Consular, France**	Algorithms / System Programming Perl / Shell	M2I- Master's degree
	C/C++ object-oriented programming (Advanced)	M2IRT- Master's degree
	Software development and modeling (Unified Modeling Language UML), Algorithms / System Programming Perl/Shell/Bash, C++Projects, web application development HTML/PHP.	Bachelor's degree
	Supervision: project monitoring, technical and research activities reports	M2I- Master's / Bachelor's degree
part-time Teacher 2004/2008 Attached Teacher/ Researcher 2008/2010 Aix-Marseille III University, Sud Toulon-Var University, France	Operating Systems, Java Programming Language (Advanced), C Programming Language (Advanced), Algorithms and Data Structures, Computing for Science, Database, Web design. Computing and computer architecture. **New courses I have created:** Speech processing and Telecom applications.	Bachelor's degree
	Information system design, Advanced Database, Java Programming	SIS Master's degree

7   Annexes Activities

- Artificial Intelligence Research Center (AIRC), College of Engineering and Information Technology, Ajman University, Ajman, United Arab Emirates.
- Scientific Research Committee, AAU, Jordan 2017.
- Organization Committee of the National Technology Parade IX, AAU, Jordan, 2016.
- Community service Committee, AAU, Jordan, 2015.
- Preparation of new course and examination papers for different modules and education degrees.
- Examiner of National Graduation Projects for BTEC Higher National Diploma in Informatics, University of Technology Teaching consular (UTEC), France, 2012.
- Examiner of Graduation Projects for M2I Master, University of Technology Teaching consular (UTEC), France, 2012.
- Organization of international travel as part of professional and cultural exchanges between France and Malta, 30 January 2012.
- Supervision of more than 20 students of Masters Computing, Networks and Tele-Communications, December 2010, IT & New Technologies Department at the UTEC.
- Organization Committee of CORIA 2009 (Conference on Search and Information Applications) 05-07 May 2009, Giens, France.