

Lina Fahed | Researcher

Machine Learning – Data Mining

Nationality: French

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Education

PhD in Computer Science (Machine Learning, Data Mining) **Nancy, France**
Lorraine University. Directors: Anne Boyer, Armelle Brun *Nov. 2012 – Oct. 2016*
Entitled: "Prediction and influence of the occurrence of events in a complex sequence"

Master (research) in Computer Science **Strasbourg, France**
Strasbourg University, Speciality: "Software & Knowledge Engineering" *Sept. 2011 – Aug. 2012*

Engineering degree in Computer Science (5 years study) **Lattakia, Syria**
Tichrine University, Faculty of Information Engineering *Sept. 2003 – Aug. 2008*
Speciality: "Software Engineering and Information Systems"

Research Experience

Postdoctoral Researcher: machine learning, predictive modeling **Brest, France**
IMT Atlantique (ex Telecom Bretagne, High Graduate School) *Dec. 2016 – Present*
Lab-STICC laboratory, DECIDE Team

- Directors: Yannis Haralambous, Philippe Lenca
- Proposing an algorithm for the detection of anomalous events in sequential data (logs data).
- Proposing an algorithm based on rules mining under gap-constraint for the early prediction of future events in sequential data
- Fulfillment of research objectives within project timelines
- Funding: via ARKEA Crédit Mutuelle industrial project (related to the bank Crédit Mutuelle)
 - Analyzing information system logs for modeling normal actions and activities to prevent future anomalies
 - Analyzing clients activities for modeling their behaviors to prevent future negative behaviors/actions

Researcher: data mining, machine learning, predictive modeling **Nancy, France**
LORIA laboratory, KIWI Team *Nov. 2012 – Aug. 2016*

- Directors during my PhD preparation: Anne Boyer, Armelle Brun
- Proposing an algorithm based on episode rules mining for early prediction of future events
- Proposing an algorithm based on episode rules mining for early detection of the emergence of future new events/associations in a data stream.
- Proposing an algorithm based on episode rules mining for influencer events detection in events sequence
- Funding: via Crédit Agricole S.A. industrial project (related to the bank Crédit Agricole S.A.)
 - Analyzing users messages on Web and Blogs for the objective of modeling the user real-life behaviors
 - Predicting users' future behaviors or interests, and monitoring the e-reputation of the bank
 - Recommending events (corresponding to real-life actions) in order to influence users' behaviors

Temporary Lecturer and Research Assistant **Nancy, France**
Lorraine University, Charlemagne Institute of Technology *Sept. 2015 – Aug. 2016*
A teaching part, and a research part dedicated for my PhD research

Assistant Professor (part time)*Lorraine University, Informatics and Cognitive Science Department***Nancy, France***Nov. 2012 – Aug. 2015***Research-intern: supervised machine learning, classification***ICUBE laboratory, BFO Team***Strasbourg, France***Sept. 2011 – Oct. 2012*

- Directors: Nicolas Lachiche, Gabriel Frey
- Proposing an algorithm based on multi-label classification for prediction objectives
- Application: predicting best programs that will generate the multiple alignment of protein sequences
- Funding: Campus France scholarship
 - Campus France is a french public institution placed under the joint supervision of the Ministry of Foreign Affairs and the Ministry of High Education.
 - Campus France has funded my Master studies through a scholarship

Assistant Professor*Damascus University, Faculty of Information Engineering***Damascus, Syria***Jan. – Jun. 2010***Research-Development Engineer***National Port Company, Computer science department***Tartous, Syria***Jan. – Dec. 2009*

- Development of new plugin for the information system

Research interests

- Data mining & Machine learning approaches: rules and patterns mining, classification, multi-label classification, clustering
- Modeling: early prediction modeling, emergent events detection, recommending systems, profile user modeling, adaptive learning
- Data: data sequences, data streams, complex data (voluminous, varied, rapid, volatile)

Teaching & Supervision Experience (342 teaching hours: lectures, practical works)

IMT Atlantique (High Graduate School): 33 teaching hours*Level: Master of Science students, group of 20 students**Courses: Data mining (classification, clustering, patterns & rules mining)***Brest, France***2017 – 2018***IMT Atlantique (High Graduate School): 5 teaching hours***Level: Master students, group of 15 students**Courses: Advanced algorithmic (optimization problems)***Brest, France***2016 – 2017***Charlemagne Institute of Technology, Lorraine University: 200 hours***Level: Bachelor students (1st and 2nd year), groups of 22 students**Courses: Object-oriented programming (Java), Bases of object design (Java), Human-machine interface programming (Java), Advanced database (PL/SQL, Triggers, Indexing), Programming Language (Java)***Nancy, France***2015 – 2016***Cognitive Science Department, Lorraine University: 82 hours***Level: Bachelor students (1st and 2nd year), groups of 25 students**Courses: Bases of Web Technologies (HTML, CSS, JavaScript), Algorithmic (Python), Database (UML)***Nancy, France***2013 – 2015***Faculty of Information Engineering, Damascus University: 22 hours***Level: Bachelor students (3rd year). Courses: Database concepts (SQL)***Damascus, Syria***2009 – 2010***Supervised projects (Bachelor and Master level):**

- End-of-studies project, Master student, IMT Atlantique (High Graduate School) (France), 2017
- Research project, 2 Master students, Telecom Nancy (High Graduate School), (France), 2014

- End-of-year project, 2 Master students, Cognitive Science, Lorraine University (France), 2013
- End-of-studies project, 4 Master students, Faculty of Information Engineering (Damascus, Syria), 2010

Jury member:

- Defense of end-of-studies internship of 2 students, IMT Atlantique (Brest, France), 2017

Skills

Computer skills:

- Programming languages: Java, R, Linux/Shell scripts, Unified Modeling language (UML), JavaScript & XML & Python (background)
- Integrated Development Environment: Eclipse, PyCharm
- Databases systems (MySQL, Oracle, PostgreSQL): SQL, PL/SQL, Triggers, Indexing
- Web technology: HTML, CSS
- Version control: Git, SVN
- Document preparation system: Latex, Beamer
- Computer clusters, resource & task manager (OAR)
- Data mining platforms: Weka
- Distributed treatment platforms (Big Data): STORM, Map-reduce & Hadoop (background)

Languages: French: bilingual, English: professional working proficiency, Arabic: bilingual

Academic services

Review committee member: Expert Systems With Applications Journal **2017**

Review committee member: RJC CIFED-CORIA conference **2016 & 2017**

Participation in PriceMinister Challenge **2015**

Proposed by "Rakuten Institute of Technology"

Objective: evaluation of our recommender systems applied on PriceMinister's data. Result: classified n°2 in terms of performance and execution time

ECML-PKDD international conference co-organization (Nancy, France) **2014**

Qualifications

Qualified to fill Associate Professor position **France, 2017**

- Associate professor qualification is an evaluation awarded by the National Council of Universities in France
- This evaluation is based on the research quality and teaching activities of the researcher
- It means that the researcher is qualified to fill associate professor positions
- Without this qualification, researchers cannot postulate for associate professor positions in France

Invited Talks

MachineLearning & DataViz meet-up **Brest, France**
Invited speaker for a meet-up about Machine Learning technologies *Mar. 2017*

Data Science workshop **Paris, France**
Invited speaker for a workshop about Data Science in Crédit Agricole Data Lab *Dec. 2016*

Publications : with oral presentation of conference papers

Summary:

- 1 International journal paper (impact factor 3.928)
- 1 International book chapter
- 2 International peer-reviewed conference papers
- 2 Francophone peer-reviewed conference papers (papers in French)
- 1 Francophone peer-reviewed workshop paper (paper in French)
- Papers under preparation:
 - 1 paper under preparation related to my PhD works: "Early detection of emergent associations" (80% done)
 - 1 paper under preparation related to my postdoc works: "Anomalies detection in Data Logs" (20% done)
 - 1 future planned paper related to my postdoc works: "Early prediction of future events in data sequences based on association rules under gap-constraint"

In details

International journal:

- Lina Fahed, Armelle Brun, Anne Boyer: DEER: Distant and Essential Episode Rules for early prediction, Expert Systems With Applications Journal (impact factor 3.928), 2018: vol 93, 283-298.

International book chapter:

- Lina Fahed, Armelle Brun, Anne Boyer: Efficient Discovery of Episode Rules With a Minimal Antecedent and a Distant Consequent, Springer-Verlag Book Chapter: Communications in Computer and Information Science (CCIS), Knowledge Discovery, Knowledge Engineering and Knowledge Management (IC3K) Revised Selected Papers, 2014, p. 3-18.

International peer-reviewed conferences:

- Lina Fahed, Armelle Brun, Anne Boyer: Influencer events in episode rules: a way to impact the occurrence of events, International Conference on Knowledge-Based and Intelligent Information & Engineering Systems (KES) (ranking B), 2015, p. 527-536.
- Lina Fahed, Armelle Brun, Anne Boyer: Episode Rules Mining Algorithm for Distant Event Prediction, International Conference in Knowledge Discovery & Information Retrieval (KDIR) (ranking C), 2014, p. 5-13.

National peer-reviewed conferences:

- Lina Fahed, Armelle Brun, Anne Boyer: Extraction de règles d'épisodes minimales dans des séquences complexes, Francophone Conference "Extraction et Gestion des Connaissances" (EGC) (ranking C), 2014, p. 545-548.
- Lina Fahed, Gabriel Frey, Julie Dawn Thompson, Nicolas Lachiche : Classification multi-étiquette pour l'alignement multiple de séquences protéiques, Francophone Conference "Extraction et Gestion des Connaissances" (EGC) (ranking C), 2013, p. 431-436.

National peer-reviewed workshops:

- Lina Fahed, Armelle Brun, Anne Boyer: Prédiction au plus tôt d'événements par règles d'épisodes. Francophone workshop: Fouille de données Spatiales et Temporelles, Extraction et Gestion des Connaissances (EGC) (ranking C), 2014, p. 27-37.

Referees

- Anne Boyer (my PhD Director); Professor in Computer Science, Head of KIWI team, Lorraine University (France), anne.boyer@loria.fr
- Armelle Brun (my PhD co-Director); Associate Professor in Computer Science, Lorraine University (France), armelle.brun@loria.fr
- Yannis Haralambous (my postdoc Director); Professor in Computer Science, IMT Atlantique (France), yannis.haralambous@imt-atlantique.fr
- Philippe Lenca (my postdoc Director); Professor in Computer Science, Head of Logic of usage, Social & Information Sciences Department, IMT Atlantique (France), philippe.lenca@imt-atlantique.fr