# Meriem BEN CHAABEN
## Computer Science Ph.D student

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## 🎓 EDUCATION

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| 2023 - ongoing | Ph.D student, Computer Science, At the university of Montreal (UdeM). |
| 2021 - 2023 | Computer Science Master student, AI Major with thesis option, At the university of Montreal (UdeM). |
| 2020 - 2021 | Information Processing and Complexity of the living Master student , At the National Engineering School of Tunis, Tunisia (ENIT). |
| 2018 - 2021 | Software Engineering Student, At the National Institute of Applied Science and Technology, Tunisia. |
| 2016 - 2018 | Preparatory cycle, At INSAT, Mathematics, Physics and Computer Science. |

## 🎓 SCHOLARSHIPS

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| Fall, Winter 2022, 2023 and 2024 | Excellence grant from the DIRO (Department of Computer Science and Operations Research) competition, University of Montreal (UdeM). |
| Winter 2021 | International Students Scholarship, As part of the program of the Ministry of Higher Education aiming at attracting international students to graduate programs in engineering and retaining them. |
| Winter 2021 | DIRO Excellence-Writing-Support scholarship competition, University of Montreal (UdeM). |
| 2021 - ongoing | TUNISIAN National Scholarship for studies in Canada |

## 💼 WORK/INTERNSHIPS

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| January 2023 April 2023 | **Graduate Teaching Assistant, UNIVERSITY OF MONTREAL, DIRO, (Winter 2023)** <br> > Course : Software analysis and design. <br> > Undergraduate course (taught in French) <br> > Conducting lab sessions, assisting the professor, grading assignments and holding office hours |
| September 2022, 2023 , 2024 December 2022. 2023, 2024 | **Graduate Teaching Assistant, UNIVERSITY OF MONTREAL, DIRO, (Fall 2022, Fall 2023)** <br><br> > Course : Software quality and metrics. <br> > Undergraduate course (taught in French) <br> > Conducting demo sessions, grading assignments and holding office hours. |
| February 2021 <br><br> Juin 2021 | **Automating software Quality Benchmarking process , UNIVERSITY OF MICHIGAN-DEARBORN-ISE LAB, End of Studies Internship.** <br> > Using clustering techniques to create customized benchmarks for software quality assessment. Using quality analysis to estimate the cost in terms of operations frequency to achieve a quantified benefit. <br> > Duty : Developing a module for Software Quality Benchmarking and quality target analysis. <br> `Python` `Java` `R` `Clustering` `NSGA-II` |
| July 2020 September 2020 | **UNIVERSITY OF MICHIGAN-DEARBORN, ISE LAB, Research Internship** <br> > Defining key concepts of container smells and anti-patterns. <br> > Collecting and cleaning Data of container-based projects. <br> `Docker` `Python` `Git/GitHub REST API` `BigQuery` |
| Jun 2019 August 2019 | **MOBILE DEVELOPMENT INTERN, EXPENSYA, Tunisia, Internship** <br> > Supporting the Expensya mobile application lifecycle. <br> > Duties : Contributed to developing new functionalities of expense management and wrote unit tests to identify malfunctions. <br> `Xamarin` `App Center` `TFS` |

# ✎ PUBLICATIONS

**December 2022** | "Towards using Few-Shot Prompt Learning for Automating Model Completion" , CONFERENCE PAPER,
> International Conference on Software Engineering (ICSE 2023) - New Ideas and Emerging Results (NIER) track
> Authors : **Meriem BenChaaben**, Loli Burgueno, Houari Sahraoui.
> **In-person presentation date** : May 17,2023 in Melbourne, Australia.

**March 2024** | "Toward Intelligent Generation of Tailored Concrete Syntax" , CONFERENCE PAPER,
> Proceedings of the ACM/IEEE 27th International Conference on Model Driven Engineering Languages and Systems (MODELS 2024).
> **In-person presentation date** : October 27,2024 in Linz, Austria.

**April 2024** | "Software Modeling Assistance with Large Language Models" , ACM STUDENT RESEARCH COMPLETION - DETAILED ABSTRACT AND POSTER,
> Proceedings of the ACM/IEEE 27th International Conference on Model Driven Engineering Languages and Systems (MODELS 2024).
> **In-person competition date** : October 25,2024 in Linz, Austria.
> Award : Second Place.

**October 2024** | "On the Utility of Domain Modeling Assistance with Large Language Models" , ACM TRANSACTIONS ON SOFTWARE ENGINEERING AND METHODOLOGY, CSS on Human-Centric SE
> Journal First Paper
> Under review

# 💼 PROJECTS

**Jun 2022**
**Jun 2023** | Automating model completion : designing and developing a design completion tool , UNIVERSITY OF MONTREAL, DIRO, Geodes Research group.
> Apply few prompt engineering principles as a novel approach to improve completion in domain modeling activities.
> Building an editor to assist designers in creating class diagrams.
> Conduct a user study to evaluate both the efficiency and correctness of the approach.

**September 2021**
**January 2022** | Learning from Java code sources to suggest concepts for the completion of class diagrams, UNIVERSITY OF MONTREAL, DIRO, Geodes Research group.
> Implementing an iterative process of diagram construction where relevant concepts are suggested.
> Using MDRE principles to discover and mine Java code projects and extract data.
Creating sub graphs data and tuning machine learning models.

> Evaluating the procedure.
Python | MoDisco | GNN | MDE concepts | Reverse Engineering

**January 2021**
**February 2021** | Classifying Musical Instruments Sound, ENIT, Academic Project
> Applying Deep Learning techniques to the classification of instrumental sounds and focusing on hyperparameters analysis.
Python | Librosa | Keras | Tensorflow

**November 2020**
**December 2020** | Tweets Mood Project, INSAT, Academic Project
> Designing and building a big data project that collects tweets in real time to analyze social mood.
Kafka | Spark | Pyspark

| February 2020 | Analyzing and Detecting Fake reviews of mobile apps - UNIVERSITY OF MICHIGAN-DEARBORN, INSAT, Final Year Project |
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| June 2020 | > Developing a Multi-label classifier to assign reviews to representative topics based on their content. |
| | > Defining features to characterize reviews. |
| | > Developing a classifier to automatically detect fake reviews in app stores. |
| | `Keras` `Scikit-learn` `Python` `Google colab` |

| November 2019 | LINK - Web and Desktop Secured Application, INSAT, Academic Project |
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| January 2020 | > Develop a web Platform to link sponsors and organizations |
| | > Duties : Develop a Desktop app for a chatting Module, secured by using LDAP, RSA and DES encryption. |
| | `LDAP` `OpenSSL` `PyQt5` `NodeJS` `ANGULAR` `Python` |

| January 2019 | Doctors' Platform, INSAT, Academic Project |
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| May 2019 | > Develop a web Platform to organize the communication between doctors and patients and manage online appointments (Calendar synchronization) |
| | `SCRUM` `ANGULAR` `Spring Boot` `JHipster` `MySQL` |

## ☰ SKILLS/CERTIFICATION

| Programming Languages | `Java` `Python` `C/C++` `C#` `TypeScript` `JavaScript` |
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| Web Frameworks | `Laravel` `Spring Boot` `.NET` `NodeJS` `ANGULAR` |
| SGBD | `ORACLE` `MySQL` `SQL Server` |
| MDE concepts, tools and languages | `EMF` `Eclipse Sirius` |
| Data Science | `Keras` `Scikit-learn` `Tensorflow` |
| DEEP LEARNING SPECIALIZATION | `DEEPLEARNING.AI , COURSERA` `NLP` `CNN` |

## </> LANGUAGES

ENGLISH : Excellent, **TOEFL (iBT) score : 98/120**
FRENCH : Excellent
GERMAN : Beginner
ARABIC : Very good

## 👥 COMMUNITY INVOLVEMENT

| May, 2024 | **Peer reviewer**, Journal of Software and Systems Modeling (SoSyM) |
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| April 3, 2024 | **Participant** in , 'Journée Francophone pour les Femmes en Informatique' (JFFI) |
| January 31, 2024 | **Research demonstration** at the expert network for model-driven engineering (MDENet) |
| October 20-21, 2023 | **Lightening talk** in the Annual Canadian Celebration of Women in Computing Conference (CAN-CWiC) |
| April 2023 | **Speaker,** Women in Computer Science Research Panel at Udem |
| October 2022, October 2024 | **Student volunteer** in MODELS conferences 2022,2024 |
| September 2019 | **Ai Hack Tunisia** |
| April 20, 2019 | Infor Hackathon 4.0 |
| 2018 - 2019 | **Vice President** , INSAT ANDROID Club |
| 2017 - 2018 | **Treasurer and event sponsoring responsible**, IEEE CS Chapter INSAT |
| February 2017 | Contestant -INSAT Collegiate programming contest -ICPC |