Moataz Chouchen

Research assistant in software engineering

Aspiring young software engineering researcher looking for opportunities in the industry.

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EDUCATION

PhD in software engineering
ETS Montreal, University of Quebec

10/2020 - Present — *Montreal, Canada*

Courses

- Software engineering methodologies
- Research methodology

Master of Science in computer science
National School of Computer Science, University of Mannouba

09/2018 - 09/2019 — *Mannouba, Tunisia*

Courses

- Master's thesis
- Deep learning
- Smart systems engineering
- Data mining
- Big data essentials
- Evolutionary algorithms

PERSONAL PROJECTS

PhD thesis: On the Support of Modern Code Review Using Explainable Machine Learning (10/2020 - Present)

- My research thesis aims to build the next generation of code review tools that can help developers optimize and better manage their code review activities since code review activities can directly impact code quality according to recent research.
- The expected outcome of this research is a set of tools that can help developers to automate some code review related activities such as reviewers' recommendations, early state code review detection, defect prediction in code changes, code recommendations based on reviewers' comments.
- During this research, we adopt multiple artificial intelligence and optimization techniques to create our tools such as deep learning, machine learning, genetic algorithms and genetic programming.
- Main thesis activities include: code review data crawling, cleaning, pre-processing and building the features for our learning problems.

Master thesis: Software defect prediction using multi-objective genetic programming (03/2019 - 09/2019)

- This thesis consists of addressing the class imbalance problem of software defect prediction (SDP) problem by adopting multi-objective genetic programming with tree-based encoding to learn SDP rules that are not biased toward the majority class and can be interpreted by developers due to the employed tree representation without the risk of concept drift since no data re-balancing is required. Our approach is validated on 29 software releases and the results suggested our approach achieves similar or better F1, G and MCC compared to state of art machine learning approaches.

Engineering summer internship project: RNN templates for time series forecasting in retail (01/2018 - 05/2018)

- We designed an RNN template to allow scientists and machine learning engineers to experiment with different configurations of RNNs for the retail data. The project was hosted by Cognira TN.

Design and development school project: Designing a data quality framework (07/2017 - 09/2017)

- We designed and implemented a framework to automate tabular data cleaning, visualization and preprocessing pipeline. This framework allowed scientists to experiment with different data preprocessing options.

SKILLS

Problem solving | C/C++ | Linux | Python | Tensorflow | Cuda | R | Spark/ Hadoop | Flask

ACHIEVEMENTS

Publications in the top tier conferences and journals
Published and submitted multiple research articles in top tier conferences and journals such as TSE, IST, EMSE, GECOO. Please check the publication list.

Top 10 in ACM TCPC 2015 (2015)
ACM TCPC is the Tunisian regional competitive programming where each team is given a problem set and tries to solve the given problems in 5 hours

Honourable mention in ACPC 2015 (2015)
ACM ACPC is the Arab regional competitive programming where each team is given a problem set and tries to solve the given problems in 5 hours.

Top 3 among Tunisians team in IEEEXTREM. 11 (2017)
IEEEXTREM is a competitive programming contest held in 24h where each team tries to solve the maximum number of given algorithmic problems.

ORGANIZATIONS

ENSI competitive programming community
co-founder

CERTIFICATES

Deep learning specialization (03/2018)
Issued by DeepLearning.AI on Coursera.

Bayesian Methods for Machine Learning (11/2018)
Issued by HSE University on Coursera.

LANGUAGES

Arab
Native or Bilingual Proficiency

English
Full Professional Proficiency

French
Full Professional Proficiency

INTERESTS

Software engineeing | Deep learning | Data mining

Publications list

Refereed Articles in International Journals:

Moataz Chouchen, Ali Ouni, Gopi Krishnan Rajbahadur, and Ahmed E. Hassan, On the Performance and Interpretability ofSearch-based Software Defects Prediction, IEEE Transactions on Software Engineering, 2021 (In revision)

Chouchen, M., Ouni, A., Mkaouer, M. W., Kula, R. G., Inoue, K. (2021). WhoReview: A multi-objective search-based approach for code reviewers recommendation in modern code review. Applied Soft Computing, 100, 106908. (Accepted)

Saidani, I., Ouni, A., Chouchen, M., Mkaouer, M. W. (2020). Predicting continuous integration build failures using evolutionary search. Information and Software Technology, 128, 106392. (Accepted)

Refereed Articles in International Conferences:

Moataz Chouchen, Ali Ouni, Raula Gaikovina Kula, Dong Wang, Patanamon Thongtanunam, Mohamed Wiem Mkaouer, Kenichi Matsumoto, Anti-patterns in Modern Code Review: Symptoms and Prevalence, 2021 IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER) (Accepted)

Moataz Chouchen, Jefferson Olongo, Ali Ouni, Mohamed Wiem Mkaouer, Predicting Code Review Completion Time in Modern Code Review, 37th International Conference on Software Maintenance and Evolution (ICSME), Registered Report (Accepted), to be submitted to the EMSE journal.

Saidani, I., Ouni, A., Chouchen, M., Mkaouer, M. W. (2021, August). Bf-detector: an automated tool for ci build failure detection. In Proceedings of the 29th ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering (pp. 1530-1534). (Accepted)

Chouchen, M., Ouni, A., Mkaouer, M. W. (2020, December). AndroLib: Third-party software library recommendation for Android applications. In International Conference on Software and Software Reuse (pp. 208-225). Springer, Cham. (Accepted)