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Master-level Internship
Application Deadline : February 15th, 2023

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Title: Mining Activities from Emails

Contact: Daniela Grigori (daniela.grigori@dauphine.fr)

Job location : Université Paris-Dauphine PSL, LAMSADE laboratory, France.

Benefits: 4 to 6 months paid 560 euros per month.

Description:

Emails play, in the personal and particularly in the professional context, a central role in activity management. Emails can be harvested and re-engineered for understanding and analyzing undocumented business process activities and their corresponding metadata. By applying ML and NLP techniques on emails, information about activities [8], their metadata and their organization into process instances can be derived. These mined data can be used by exiting process mining tools to discover and analyze the inherent business processes executed by exchanging messages. Process mining is a recent research topic that applies artificial intelligence and data mining techniques to process modelling and analysis [1,2].

Objectives:
The aim of this internship is to propose techniques for mining business activities and related data from emails in order to improve and extend our recent work [3-7] by applying machine learning techniques [9]

Required skills:
We seek for excellent and highly motivated student with a background in Computer Science having good knowledge of NLP, ML and good programming skills (Python).

To apply:
Please send the following material in a single PDF document before February 15th, 2023:
- fully detailed CV,
- academic records (master's degree or equivalent),
- recommendation(s) and supporting letter(s).

References
[1] Van Der Aalst, W. (2016). Data science in action. In Process mining. Springer, Berlin, Heidelberg.
[2] Beheshti, S.M.R., Benatallah, B., Sakr, S., Grigori, D., Motahari-Nezhad, H. R., Barukh, M. C., Gater, A., & Ryu, S. H. (2016). Process Analytics: concepts and techniques for querying and analyzing process data. Springer

[3] Raphaël Azorin, Daniela Grigori, Khalid Belhajjame:
A Reproducible Approach for Mining Business Activities from Emails for Process Analytics.
ICSOC Workshops 2021: 77-91

[4] Diana Jlailaty, Daniela Grigori, Khalid Belhajjame:
On the elicitation and annotation of business activities based on emails. SAC 2019: 101-103
[5] Diana Jlailaty, Daniela Grigori, Khalid Belhajjame: Email Business Activities Extraction
and Annotation. ISIP 2018: 69-86
[6] Diana Jlailaty, Daniela Grigori, Khalid Belhajjame:
Business Process Instances Discovery from Email Logs. SCC 2017: 19-26
[7] Diana Jlailaty, Daniela Grigori, Khalid Belhajjame:
Mining Business Process Activities from Email Logs. ICCC 2017: 112-119
[8] Sudipto Mukherjee, Subhabrata Mukherjee, Marcello Hasegawa, Ahmed Hassan
Awadallah, Ryen White, Smart To-Do: Automatic Generation of To-Do Items from Emails,
Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics,
2020, 8 jul, Association for Computational Linguistics

[9] Tobias Jacobs and Jingyi Yu and J. Gastinger and Timo Sztyler , ProcK: Machine Learning for
ArXiv, 2021