

ADAPT Undergraduate Internship Programme 2017

PROJECT DESCRIPTION

Institution/Team:	Business Informatics Group(BIG), DCU	
Project Title:	Process Mining approaches to improve accuracy of business process models	
Suitable for students who are studying in the following areas:	Process mining, Process management, Data Management Systems, Data mining approaches, Machine Learning	
Skills needed:	Programing skills e.g. Java, Python, etc. Database systems, Knowledge in any Query languages e.g. SQL, SPARQL etc.	
Project Description:	<p>Today's IT enterprises are complex organisms that involve a variety of technologies, people of different roles and processes that retrieve, store and manipulate information. Business Processes (BP) are core units of any enterprise and their accuracy and efficiency are crucial to the success of the business. BPs could have a hierarchical structure (e.g. the main process could encompass several sub-processes and every sub-process can consist of a number of activities); it could involve interaction with various groups of users/actors and it could be governed by complex rules to increase its flexibility and performance.</p> <p>Considering the statement above, process management could become a very challenging and complex endeavor. Specifically, monitoring and keeping up to date the documentation of the business process (e.g. to reflect the reality) could be rendered difficult, especially in a large and dynamic organization where systems, software, processes and regulation (rules) are changed and updated frequently.</p> <p>Process mining is an activity which allows the analysis of business processes based on evidence. These could include, database record logs, various process metadata such as event/transaction logs, reports, etc. The applications of process mining are several e.g. process reconstruction, process design, and efficiency improvement, detecting process inconsistencies with the real world system, etc.</p>	
The Role of the student & benefits gained from participation in this project:¹	<p>The role of the student would be to identify, review and compare available process mining approaches that would serve best for detection of discrepancies between documented Business process and real world information systems.</p> <p>Student will gain understanding and expertise in a number of algorithms for data mining and process analysis</p>	
Who will be working with you?	Our undergraduate student will be working closely with Plamen Petkov, a postdoc in the group. S/he will also have the support of Markus Helfert, who works on a similar project. The student will participate in all our project meetings during his/her time with us.	
Short description of the group:	We have 10 people in our group – Dr. Markus Helfert (the team leader/PI), 3 post-docs, 6 PhD students.	
Recommended Reading Material:	<ul style="list-style-type: none"> Business process modeling - https://en.wikipedia.org/wiki/Business_process_modeling ProM Tools - http://www.promtools.org/doku.php Process Mining. Discovery, Conformance and Enhancement of Business Processes, Wil M.P. van der Aalst (2011) Springer. 	
For further details on this project please contact:	Name: Phone: E-Mail: Website:	Plamen.petkov@adaptcentre.ie

¹ This is an initial description of the role of the student and it is liable to change following discussions between the investigators and the student.