



COMPLEX STUDENT PATHWAYS: EXPLORING THE TIME TO DEGREE

V. Miguéis

Faculty of Engineering of University of Porto (PORTUGAL)

Deviations from the regular path of a higher education student are characteristic of complex pathways. These can be the result of delays in completing a degree, dropping out, taking breaks or changing courses. Although there is a large body of research that examines educational data to support students' academic careers, there is a paucity of research on student trajectories. The literature on complex student trajectories in higher education is limited to a handful of articles, most of which focus on very specific issues related to students' backgrounds (asylum seekers, immigrants, refugees, etc.) or previous education (transition from community college to university, vocational school, etc.).

This study aims to explore complex trajectories resulting from a change of degree and focuses on predicting the time to graduation of students who change degrees, i.e. have a complex pathway. This study will address the task of predicting how long it will take a student with a complex trajectory to graduate. To achieve this, we propose to characterise the cohorts of students who graduate with a complex or simple pathway and to identify the characteristics that influence the time to graduation. Machine learning techniques such as neural networks and random forests will be used to support this predictive task. In addition, interpretable techniques such as decision trees will be used to provide decision makers with some managerial insights.

The relevance of this study stems from the fact that the knowledge of how long a student will remain at the university will help the decision makers in the allocation of material and human resources. More specifically, by identifying those students who take longer to complete their studies, tailored interventions such as counselling and tutoring can be promoted.

Keywords: Complex Student Pathways, Educational Mining, Machine Learning.

