Paper Summary – Assignment 2

**Visual Progression Analysis of Student Records Data**

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Objective (Section 1) 6 – 8 sentences

Universities invest a lot into programs that are designed to help increase student retention and success, but this has not been the case. Universities use designs on how students are expected to progress through the curricula, with programs put in place to support the student. With the aim of intended outcomes will be achieved by the students. However, most of these decisions are based on theories, convenience, and sometimes just on 'lore' and feel. In order to get real-world understanding, population-scale student data records are available to the university administrators, but these are across different offices. By creating a system called eCamp, it is intended to bring all this information together to allow judgements to be done effectively and not based on hypothetical views.

Even though quite a few universities have invested substantially in programs designed to increase student retention and success, the success rate has not improved very much [18,19]. many may end up dropping out. The attrition comes with significant pedagogical, economic, and societal costs. The related concerns have been growing year over year, especially during the past decade in the United States

universities, there are sophisticated designs of how students are expected to progress through the curricula; and there are mechanisms put in place to support and foster the process so that the intended outcomes are achieved for the students. The designs involve many decisions about student advising, curriculum design, overlaps between majors, and what choices students can make at different times about their college affiliation and degree programs

design decisions are made cumulatively by many people involved, sometimes based on theories, sometimes based on convenience, and sometimes based on subjective “lore” or “feel” that is derived from years of accumulated experience. It is important for all people involved to have a clear and complete view of the intrinsics in student progression processes.

Using Graphs

In order to gain insights about student progression, student success, and student retention, a data science approach should examine the real world progression of students, as opposed to the hypothetical progression codified in the course catalog, graduation requirements, and advising guidelines. This real world information exists in the form of population-scale student records data that are available to university administrators, but are typically spread amongst independent offices. The data includes course grades, student schedules, major information, and university withdrawal rates.

1.2 - Difference in Literature (2.1 – 2.2) (2 small paragraphs)

Graph is a standard model to represent student progression processes. For example, course prerequisite relationships are often displayed as graphs. These graphs however, do not show how students actually progress, succeed or fail throughout their studies but rather give hints to what paths they should take. Graph models that show true progression are not always constructed and evaluated explicitly. In part, this is because campus administrative offices’ view of the entire process is limited to their specific functions only. In part, that’s also because of not knowing how the student population would make choices when they are allowed choices. As the associate provost of the authors’ university acknowledged - “no one has the full picture”.

1.3 – Support for the claim (section 3 + 4)

3.1 - Description of Software Developed

3.2 - Description of Evidence to support the claim

3.3 - Areas of Future potential work