

**KLASIFIKASI NILAI MATA KULIAH
BERDASARKAN REKAM AKADEMIS
MENGUNAKAN *SUPPORT VECTOR MACHINE*
(Studi Kasus : Nilai Mata Kuliah Mahasiswa Statistika Universitas Islam
Indonesia Angkatan 2015)**

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INTISARI

Rekam akademis memiliki arti bekas atau kesan yang berhubungan dengan ilmu pengetahuan dalam bentuk catatan. Dalam penelitian ini akan digunakan rekam akademis pada mahasiswa Statistika UII angkatan 2015 yang meliputi persentase keterlambatan kehadiran kuliah, jenis mata kuliah yang diambil, jadwal hari dan jam mata kuliah, dan jumlah SKS (Sistem Kredit Semester). Rekam akademis ini penting karena memiliki pola yang mempengaruhi nilai mata kuliah. Maka dari itu untuk mengetahui pola rekam akademis mahasiswa maka diperlukanlah metode klasifikasi nilai mata kuliah berdasarkan rekam akademis, digunakanlah klasifikasi Support Vector Machine (SVM) karena metode ini handal untuk klasifikasi dengan dimensi yang tinggi dan *multiclass*. Pada data rekam akademis diketahui bahwa terdapat ketidak seimbangan data, maka untuk mengatasinya digunakanlah metode *Synthetic Minority Oversampling Technique* (SMOTE) sehingga performa aklasifikasi akan semakin baik. Didapatkan kesimpulan bahwa dengan menggunakan SVM metode SMOTE diketahui tingkat akurasi klasifikasi 58% dengan Cost 10 dan gamma 100 sehingga mahasiswa yang mendapat predikat nilai “Amat baik” yaitu sebanyak 363, “baik” sebanyak 102, “cukup” sebanyak 4, “kurang” hanya 2, “sangat kurang” hanya satu, serta “tidak memenuhi” sebanyak 66.

Kata Kunci: Klasifikasi, Nilai Mahasiswa, *Support Vector Machine* (SVM), *Synthetic Minority Oversampling Technique* (SMOTE)

CLASSIFICATION OF STUDENT GRADE BASED ON ACADEMIC RECORDS USING SUPPORT VECTOR MACHINE

**(Study Case : Grade Point Average Of Statistics Student of Universitas Islam
Indonesia years 2015)**

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ABSTRACT

Academic records have meaning “used” or “impressions” related to science in the form of notes. In this research we use academic records of Statistics Students of Islamic University of Indonesia years 2015, which is like the percentage of late attendance, types of courses taken, schedule of days and hours of courses, and the number of SKS (Semester Credit System). This academic record is important because it has a pattern that affects the grade of the course. Therefore to find out the pattern of student academic records, it is necessary to classify the grade of the courses based on academic records, the Support Vector Machine (SVM) classification method is used because this method is reliable for classification with high dimensions and multiclass. In the academic record’s data it is known that there is an imbalance of data, so to overcome it, the Synthetic Minority Oversampling Technique (SMOTE) method is used in SVM so that the performance of the classification will be better. It was concluded that by using the SVM SMOTE method known that classification accuracy levels of 58% with Cost 10 and gamma 100 so that students who go in to "Very good" class are 363, "good" class are 102, "enough" class are 4, "less" class are 2, "very less" class is only one, and "not fulfilled" class are 66.

Keywords: Classification, Grade Point Average, *Support Vector Machine* (SVM), *Synthetic Minority Oversampling Technique* (SMOTE).