



# Student Desertion Prediction Using Kernel Relevance Analysis

Jorge Fernández<sup>1</sup>  
Angelica Rojas<sup>2,3</sup>  
Genaro Daza<sup>2</sup>  
Diana Gómez<sup>2</sup>  
Andrés Álvarez<sup>1</sup>  
Álvaro Orozco<sup>1</sup>

<sup>1</sup>Automatics Research Group, Pereira, Colombia. jorgeferram17@utp.edu.co

<sup>2</sup>Vicerrectoria de Responsabilidad Social y Bienestar Universitario,  
Universidad Tecnológica de Pereira, Pereira, Colombia. angelica.rojas@utp.edu.co

<sup>3</sup>Maestría en Administración del Desarrollo Humano y Organizacional,  
Universidad Tecnológica de Pereira, Pereira, Colombia.

## Abstract

*This paper presents a kernel-based relevance analysis to support student desertion prediction. Our approach, termed KRA-SD, is twofold: (i) A feature ranking based on centered kernel alignment to match demographic, academic, and biopsychosocial measures with the output labels (deserter/not deserter), and (ii) classification stage based on  $k$ -nearest neighbors and support vector machines to predict the desertion. For concrete testing, the student desertion database of the Universidad Tecnológica de Pereira is employed to assess the KRA-SD under a training, validation, and testing scheme. Attained results show that the proposed approach can recognize the main features related to the student desertion achieving an 85.64% of accuracy. Therefore, the proposed system aims to serve as a handy tool for planning strategies to prevent students from leaving the university without finishing their studies.*

**Keywords:** Student desertion, Relevance analysis, Feature selection, Kernel methods

Disponible en <https://www.springer.com/gp/book/9783030011314>



Este contenido se publica bajo licencia CC-BY 4.0

