

## ABSTRAK

Younky Reza Aprila Ghisa Pradana, 2025. Rancang Bangun *Clustering* Jurusan Kuliah Bagi Siswa SMA Menggunakan Algoritma K-Means. *Skripsi*. Program Studi Teknik Informatika, FT, Universitas PGRI Madiun. Pembimbing (I) Saifulloh, S.Kom., M.Kom (II) Pratiwi Susanti, S.Kom., M.MT.

Banyak siswa SMA mengalami kesulitan dalam memilih jurusan kuliah yang sesuai dengan minat, bakat, dan kemampuan akademik mereka. Kesalahan dalam mengenali potensi diri ini sering kali berujung pada kesalahan dalam pemilihan jurusan, yang dapat berdampak pada rendahnya motivasi dan prestasi belajar. Penelitian ini merancang sistem rekomendasi jurusan menggunakan algoritma K-Means untuk mengelompokkan siswa berdasarkan data nilai akademik serta minat dan bakat. Sistem ini diharapkan membantu siswa dan guru BK dalam menentukan jurusan yang lebih tepat dan sesuai karakteristik siswa. Proses pengolahan data dilakukan melalui tahap *preprocessing*, normalisasi, dan *clustering*, yang kemudian menghasilkan visualisasi kelompok jurusan secara lebih terarah. Hasil dari sistem ini diharapkan dapat menjadi bahan pertimbangan tambahan dalam pengambilan keputusan akademik siswa.

Kata Kunci: Jurusan kuliah, K-Means, *clustering*, minat, bakat, rekomendasi

## ABSTRACT

Younky Reza Aprila Ghisa Pradana, 2025. *Design and Development of College Major Clustering for High School Students Using the K-Means Algorithm. Undergraduate Thesis. Informatics Engineering Study Program, Faculty of Engineering, Universitas PGRI Madiun. Advisors: (I) Saifulloh, S.Kom., M.Kom, (II) Pratiwi Susanti, S.Kom., M.MT.*

*Many high school students struggle to choose a college major that aligns with their interests, talents, and academic abilities. Misjudging their own potential often leads to selecting the wrong major, which can negatively impact their motivation and academic performance. This study designs a major recommendation system using the K-Means algorithm to cluster students based on academic scores, interests, and talents. The system is expected to assist students and school counselors in determining a more suitable major that matches the student's characteristics. The data processing involves stages such as preprocessing, normalization, and clustering, which then produce a more directed visualization of the major groupings. The results of this system are expected to serve as an additional consideration in students' academic decision-making.*

*Keywords: College major, K-Means, clustering, interest, talent, recommendation*