Learning Behaviour Analysis and Visualization System

V. Sivasakthi M. E[1], B. Shanmuga Priya[2], R. Padmashini[3], R. Tharuna Selvi[4]

Assistant Professor, Anjalai Ammal Mahalingam Engineering College, Kovilvenni, Thiruvarur, India[1]

Students, Anjalai Ammal Mahalingam Engineering College, Kovilvenni, Thiruvarur, India[2,3,4]

Abstract: *The Learning Behaviour Analysis and Visualization System aims to enhance the personalization of e-learning by identifying and analysing individual learning styles. Leveraging the Felder-Silverman Learning Styles Model, the system classifies learners based on psychological self-assessments. Hybrid filtering techniques and intuitionist fuzzy logic are used to predict learner preferences and handle uncertainty in responses. A Learner Characteristic Model captures interpersonal traits, while pattern analysis evaluates efficiency. Logistic regression is employed to forecast learner performance using historical data. The system visually represents learning behaviours to aid both learners and instructors. Additionally, a recommendation engine suggests suitable educational resources. This approach promotes adaptive learning, improves engagement, and supports data-driven educational strategies*

Keywords: Learning Behaviour, Fuzzy Logic, Hybrid Filtering, Visualization, Learner Characteristic Model, Adaptive Learning