

## Dataset “Predict students' dropout and academic success”

### Citation Requests/Acknowledgements

If you use this dataset in experiments for a scientific publication, please kindly cite our paper and/or the dataset available in Zenodo.

1. V. Realinho, J. Machado, L. Baptista, M. V. Martins. (2021). “Predict students' dropout and academic success” (1.0) [Data set]. Zenodo. DOI: [10.5281/zenodo.5777340](https://doi.org/10.5281/zenodo.5777340)
2. M. V. Martins, D. Tolledo, J. Machado, L. M. T. Baptista, V. Realinho. (2021) “Early prediction of student’s performance in higher education: a case study” Trends and Applications in Information Systems and Technologies, vol.1, in Advances in Intelligent Systems and Computing series. Springer. DOI: [10.1007/978-3-030-72657-7\\_16](https://doi.org/10.1007/978-3-030-72657-7_16)

### Features Information

Feature	Type	Description
Marital status	Numeric/discrete	1 – single 2 – married 3 – widower 4 – divorced 5 – facto union 6 – legally separated
Application mode	Numeric/discrete	1 - 1st phase - general contingent 2 - Ordinance No. 612/93 5 - 1st phase - special contingent (Azores Island) 7 - Holders of other higher courses 10 - Ordinance No. 854-B/99 15 - International student (bachelor) 16 - 1st phase - special contingent (Madeira Island) 17 - 2nd phase - general contingent 18 - 3rd phase - general contingent 26 - Ordinance No. 533-A/99, item b2) (Different Plan) 27 - Ordinance No. 533-A/99, item b3 (Other Institution) 39 - Over 23 years old 42 - Transfer 43 - Change of course 44 - Technological specialization diploma holders 51 - Change of institution/course 53 - Short cycle diploma holders 57 - Change of institution/course (International)
Application order	Numeric/discrete	Application order (between 0 - first choice; and 9 last choice)
Course	Numeric/discrete	33 - Biofuel Production Technologies 171 - Animation and Multimedia Design 8014 - Social Service (evening attendance) 9003 - Agronomy 9070 - Communication Design 9085 - Veterinary Nursing 9119 - Informatics Engineering 9130 - Equiculture 9147 - Management 9238 - Social Service 9254 - Tourism 9500 - Nursing 9556 - Oral Hygiene 9670 - Advertising and Marketing Management 9773 - Journalism and Communication 9853 - Basic Education 9991 - Management (evening attendance)
Daytime/evening attendance	Numeric/binary	1 – daytime 0 - evening

Previous qualification	Numeric/discrete	1 - Secondary education 2 - Higher education - bachelor's degree 3 - Higher education - degree 4 - Higher education - master's 5 - Higher education - doctorate 6 - Frequency of higher education 9 - 12th year of schooling - not completed 10 - 11th year of schooling - not completed 12 - Other - 11th year of schooling 14 - 10th year of schooling 15 - 10th year of schooling - not completed 19 - Basic education 3rd cycle (9th/10th/11th year) or equiv. 38 - Basic education 2nd cycle (6th/7th/8th year) or equiv. 39 - Technological specialization course 40 - Higher education - degree (1st cycle) 42 - Professional higher technical course 43 - Higher education - master (2nd cycle)
Previous qualification (grade)	Numeric/continuous	Grade of previous qualification (between 0 and 200)
Nationality	Numeric/discrete	1 - Portuguese 2 - German 6 - Spanish 11 - Italian 13 - Dutch 14 - English 17 - Lithuanian 21 - Angolan 22 - Cape Verdean 24 - Guinean 25 - Mozambican 26 - Santomean 32 - Turkish 41 - Brazilian 62 - Romanian 100 - Moldova (Republic of) 101 - Mexican 103 - Ukrainian 105 - Russian 108 - Cuban 109 - Colombian
Mother's qualification	Numeric/discrete	1 - Secondary Education - 12th Year of Schooling or Eq. 2 - Higher Education - Bachelor's Degree 3 - Higher Education - Degree 4 - Higher Education - Master's 5 - Higher Education - Doctorate 6 - Frequency of Higher Education 9 - 12th Year of Schooling - Not Completed 10 - 11th Year of Schooling - Not Completed 11 - 7th Year (Old) 12 - Other - 11th Year of Schooling 14 - 10th Year of Schooling 18 - General commerce course 19 - Basic Education 3rd Cycle (9th/10th/11th Year) or Equiv. 22 - Technical-professional course 26 - 7th year of schooling 27 - 2nd cycle of the general high school course 29 - 9th Year of Schooling - Not Completed 30 - 8th year of schooling 34 - Unknown 35 - Can't read or write 36 - Can read without having a 4th year of schooling 37 - Basic education 1st cycle (4th/5th year) or equiv. 38 - Basic Education 2nd Cycle (6th/7th/8th Year) or Equiv. 39 - Technological specialization course 40 - Higher education - degree (1st cycle) 41 - Specialized higher studies course 42 - Professional higher technical course 43 - Higher Education - Master (2nd cycle) 44 - Higher Education - Doctorate (3rd cycle)
Father's qualification	Numeric/discrete	1 - Secondary Education - 12th Year of Schooling or Eq. 2 - Higher Education - Bachelor's Degree

		3 - Higher Education - Degree 4 - Higher Education - Master's 5 - Higher Education - Doctorate 6 - Frequency of Higher Education 9 - 12th Year of Schooling - Not Completed 10 - 11th Year of Schooling - Not Completed 11 - 7th Year (Old) 12 - Other - 11th Year of Schooling 13 - 2nd year complementary high school course 14 - 10th Year of Schooling 18 - General commerce course 19 - Basic Education 3rd Cycle (9th/10th/11th Year) or Equiv. 20 - Complementary High School Course 22 - Technical-professional course 25 - Complementary High School Course - not concluded 26 - 7th year of schooling 27 - 2nd cycle of the general high school course 29 - 9th Year of Schooling - Not Completed 30 - 8th year of schooling 31 - General Course of Administration and Commerce 33 - Supplementary Accounting and Administration 34 - Unknown 35 - Can't read or write 36 - Can read without having a 4th year of schooling 37 - Basic education 1st cycle (4th/5th year) or equiv. 38 - Basic Education 2nd Cycle (6th/7th/8th Year) or Equiv. 39 - Technological specialization course 40 - Higher education - degree (1st cycle) 41 - Specialized higher studies course 42 - Professional higher technical course 43 - Higher Education - Master (2nd cycle) 44 - Higher Education - Doctorate (3rd cycle)
Mother's occupation	Numeric/discrete	0 - Student 1 - Representatives of the Legislative Power and Executive Bodies, Directors, Directors and Executive Managers 2 - Specialists in Intellectual and Scientific Activities 3 - Intermediate Level Technicians and Professions 4 - Administrative staff 5 - Personal Services, Security and Safety Workers and Sellers 6 - Farmers and Skilled Workers in Agriculture, Fisheries and Forestry 7 - Skilled Workers in Industry, Construction and Craftsmen 8 - Installation and Machine Operators and Assembly Workers 9 - Unskilled Workers 10 - Armed Forces Professions 90 - Other Situation 99 - (blank) 122 - Health professionals 123 - teachers 125 - Specialists in information and communication technologies (ICT) 131 - Intermediate level science and engineering technicians and professions 132 - Technicians and professionals, of intermediate level of health 134 - Intermediate level technicians from legal, social, sports, cultural and similar services 141 - Office workers, secretaries in general and data processing operators 143 - Data, accounting, statistical, financial services and registry-related operators 144 - Other administrative support staff 151 - personal service workers 152 - sellers 153 - Personal care workers and the like 171 - Skilled construction workers and the like, except electricians 173 - Skilled workers in printing, precision instrument manufacturing, jewelers, artisans and the like 175 - Workers in food processing, woodworking, clothing and other industries and crafts 191 - cleaning workers 192 - Unskilled workers in agriculture, animal production, fisheries and forestry 193 - Unskilled workers in extractive industry, construction, manufacturing and transport 194 - Meal preparation assistants

Father's occupation	Numeric/discrete	0 - Student 1 - Representatives of the Legislative Power and Executive Bodies, Directors, Directors and Executive Managers 2 - Specialists in Intellectual and Scientific Activities 3 - Intermediate Level Technicians and Professions 4 - Administrative staff 5 - Personal Services, Security and Safety Workers and Sellers 6 - Farmers and Skilled Workers in Agriculture, Fisheries and Forestry 7 - Skilled Workers in Industry, Construction and Craftsmen 8 - Installation and Machine Operators and Assembly Workers 9 - Unskilled Workers 10 - Armed Forces Professions 90 - Other Situation 99 - (blank) 101 - Armed Forces Officers 102 - Armed Forces Sergeants 103 - Other Armed Forces personnel 112 - Directors of administrative and commercial services 114 - Hotel, catering, trade and other services directors 121 - Specialists in the physical sciences, mathematics, engineering and related techniques 122 - Health professionals 123 - teachers 124 - Specialists in finance, accounting, administrative organization, public and commercial relations 131 - Intermediate level science and engineering technicians and professions 132 - Technicians and professionals, of intermediate level of health 134 - Intermediate level technicians from legal, social, sports, cultural and similar services 135 - Information and communication technology technicians 141 - Office workers, secretaries in general and data processing operators 143 - Data, accounting, statistical, financial services and registry-related operators 144 - Other administrative support staff 151 - personal service workers 152 - sellers 153 - Personal care workers and the like 154 - Protection and security services personnel 161 - Market-oriented farmers and skilled agricultural and animal production workers 163 - Farmers, livestock keepers, fishermen, hunters and gatherers, subsistence 171 - Skilled construction workers and the like, except electricians 172 - Skilled workers in metallurgy, metalworking and similar 174 - Skilled workers in electricity and electronics 175 - Workers in food processing, woodworking, clothing and other industries and crafts 181 - Fixed plant and machine operators 182 - assembly workers 183 - Vehicle drivers and mobile equipment operators 192 - Unskilled workers in agriculture, animal production, fisheries and forestry 193 - Unskilled workers in extractive industry, construction, manufacturing and transport 194 - Meal preparation assistants 195 - Street vendors (except food) and street service providers
Admission grade	Numeric/continous	Admission grade (between 0 and 200)
Displaced	Numeric/binary	1 – yes 0 – no
Educational special needs	Numeric/binary	1 – yes 0 – no
Debtor	Numeric/binary	1 – yes 0 – no
Tuition fees up to date	Numeric/binary	1 – yes 0 – no
Gender	Numeric/binary	1 – male 0 – female
Scholarship holder	Numeric/binary	1 – yes 0 – no
Age at enrollment	Numeric/discrete	Age of studend at enrollment

International	Numeric/binary	1 – yes 0 – no
Curricular units 1st sem (credited)	Numeric/discrete	Number of curricular units credited in the 1st semester
Curricular units 1st sem (enrolled)	Numeric/discrete	Number of curricular units enrolled in the 1st semester
Curricular units 1st sem (evaluations)	Numeric/discrete	Number of evaluations to curricular units in the 1st semester
Curricular units 1st sem (approved)	Numeric/discrete	Number of curricular units approved in the 1st semester
Curricular units 1st sem (grade)	Numeric/discrete	Grade average in the 1st semester (between 0 and 20)
Curricular units 1st sem (without evaluations)	Numeric/discrete	Number of curricular units without evaluations in the 1st semester
Curricular units 2nd sem (credited)	Numeric/discrete	Number of curricular units credited in the 2nd semester
Curricular units 2nd sem (enrolled)	Numeric/discrete	Number of curricular units enrolled in the 2nd semester
Curricular units 2nd sem (evaluations)	Numeric/discrete	Number of evaluations to curricular units in the 2nd semester
Curricular units 2nd sem (approved)	Numeric/discrete	Number of curricular units approved in the 2nd semester
Curricular units 2nd sem (grade)	Numeric/discrete	Grade average in the 2nd semester (between 0 and 20)
Curricular units 2nd sem (without evaluations)	Numeric/discrete	Number of curricular units without evaluations in the 1st semester
Unemployment rate	Numeric/continuous	Unemployment rate (%)
Inflation rate	Numeric/continuous	Inflation rate (%)
GDP	Numeric/continuous	GDP
Target	Categorical	Target. The problem is formulated as a three category classification task (dropout, enrolled, and graduate) at the end of the normal duration of the course.