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Running Genetic Algorithm with HistGradientBoosting...

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=== GENETIC ALGORITHM OPTIMIZATION ===

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[Initialization]

- Population size: 30

- Generations: 20

- Crossover rate: 80%

- Mutation rate: 20%

- Search space: 334 features

- Target: Minimize MSE using HistGradientBoosting

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=== OPTIMIZATION RESULTS ===

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▶ Best MSE achieved: 0.000545

▶ Time elapsed: 1727.94 seconds

▶ Features selected: 185/334 (44.6% reduction)

▶ Selected features:

1. AMT\_ANNUITY

2. AMT\_CREDIT

3. AMT\_GOODS\_PRICE

4. CODE\_GENDER

5. DAYS\_BIRTH

6. EXT\_SOURCE\_1

7. EXT\_SOURCE\_2

8. EXT\_SOURCE\_3

9. FLAG\_EMP\_PHONE

10. FLOORSMAX\_MEDI

11. LIVINGAREA\_AVG

12. NAME\_EDUCATION\_TYPE

13. NAME\_FAMILY\_STATUS

14. NAME\_INCOME\_TYPE

15. ORGANIZATION\_TYPE

16. REGION\_RATING\_CLIENT\_W\_CITY

17. REG\_CITY\_NOT\_LIVE\_CITY

18. Count\_POS\_CASH\_balance\_train\_csv\_\_where\_CNT\_INSTALMENT\_FUTURE\_in\_\_3\_5\_\_7\_5\_

19. Count\_POS\_CASH\_balance\_train\_csv\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

20. Count\_bureau\_train\_csv\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

21. CountDistinct\_bureau\_train\_csv\_CREDIT\_ACTIVE\_\_where\_DAYS\_ENDDATE\_FACT\_\_\_\_\_1678\_5

22. CountDistinct\_previous\_application\_train\_csv\_CODE\_REJECT\_REASON\_

23. CountDistinct\_previous\_application\_train\_csv\_NAME\_CONTRACT\_STATUS\_

24. Max\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_SK\_DPD\_\_\_0\_5

25. Max\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

26. Max\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

27. Max\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

28. Max\_bureau\_train\_csv\_DAYS\_CREDIT\_UPDATE\_\_where\_CREDIT\_DAY\_OVERDUE\_\_\_0\_5

29. Max\_bureau\_train\_csv\_SK\_ID\_BUREAU\_\_where\_AMT\_CREDIT\_SUM\_OVERDUE\_\_\_\_0\_0225

30. Max\_credit\_card\_balance\_train\_csv\_CNT\_DRAWINGS\_CURRENT\_

31. Max\_installments\_payments\_train\_csv\_AMT\_INSTALMENT\_

32. Max\_installments\_payments\_train\_csv\_AMT\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_\_8088\_8175

33. Max\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_NUM\_INSTALMENT\_VERSION\_in\_\_0\_5\_\_1\_5\_

34. Max\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_369\_5

35. Max\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_\_830\_5

36. Max\_previous\_application\_train\_csv\_AMT\_DOWN\_PAYMENT\_

37. Mean\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_MONTHS\_BALANCE\_\_\_\_27\_5

38. Mean\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_DEF\_\_where\_NAME\_CONTRACT\_STATUS\_\_\_Active

39. Mean\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_AMT\_CREDIT\_SUM\_LIMIT\_\_\_\_0\_0225

40. Mean\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_CREDIT\_DAY\_OVERDUE\_\_\_\_0\_5

41. Mean\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_DEBT\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405

42. Mean\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_\_0\_0675

43. Mean\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_CREDIT\_CURRENCY\_\_\_currency\_1

44. Mean\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_DAYS\_CREDIT\_\_\_\_983\_5

45. Mean\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

46. Mean\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_AMT\_INSTALMENT\_\_\_8783\_3025

47. Mean\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_NUM\_INSTALMENT\_VERSION\_\_\_\_1\_5

48. Mean\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45

49. Mean\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_369\_5

50. Mean\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_NUMBER\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45

51. Mean\_previous\_application\_train\_csv\_DAYS\_FIRST\_DRAWING\_

52. Median\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

53. Median\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

54. Median\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_\_where\_AMT\_CREDIT\_SUM\_OVERDUE\_\_\_0\_0225

55. Median\_bureau\_train\_csv\_DAYS\_CREDIT\_

56. Median\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

57. Median\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_CNT\_CREDIT\_PROLONG\_\_\_\_0\_5

58. Median\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_NUM\_INSTALMENT\_VERSION\_in\_\_0\_5\_\_1\_5\_

59. Median\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_\_1663\_5

60. Median\_previous\_application\_train\_csv\_AMT\_DOWN\_PAYMENT\_

61. Median\_previous\_application\_train\_csv\_RATE\_DOWN\_PAYMENT\_

62. Min\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_

63. Min\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed

64. Min\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_LIMIT\_\_\_0\_0225

65. Min\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

66. Min\_previous\_application\_train\_csv\_HOUR\_APPR\_PROCESS\_START\_

67. Min\_previous\_application\_train\_csv\_RATE\_DOWN\_PAYMENT\_

68. Mode\_bureau\_balance\_preprocessed\_train\_csv\_STATUS\_\_where\_STATUS\_not\_in\_\_C\_\_0\_\_X\_

69. Mode\_bureau\_train\_csv\_CREDIT\_ACTIVE\_\_where\_CREDIT\_CURRENCY\_\_\_currency\_1

70. Mode\_bureau\_train\_csv\_CREDIT\_ACTIVE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

71. Mode\_previous\_application\_train\_csv\_NAME\_CONTRACT\_STATUS\_

72. Mode\_previous\_application\_train\_csv\_NAME\_SELLER\_INDUSTRY\_

73. StdDev\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_CNT\_INSTALMENT\_FUTURE\_in\_\_3\_5\_\_7\_5\_

74. StdDev\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_CNT\_INSTALMENT\_\_\_\_12\_5

75. StdDev\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_DEF\_

76. StdDev\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_DEF\_\_where\_CNT\_INSTALMENT\_\_\_24\_5

77. StdDev\_POS\_CASH\_balance\_train\_csv\_SK\_ID\_PREV\_\_where\_CNT\_INSTALMENT\_FUTURE\_in\_\_3\_5\_\_7\_5\_

78. StdDev\_POS\_CASH\_balance\_train\_csv\_SK\_ID\_PREV\_\_where\_CNT\_INSTALMENT\_FUTURE\_in\_\_7\_5\_\_13\_5\_

79. StdDev\_credit\_card\_balance\_train\_csv\_AMT\_DRAWINGS\_ATM\_CURRENT\_

80. StdDev\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_AMT\_INSTALMENT\_in\_\_8783\_3025\_\_16549\_6725\_

81. StdDev\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_\_where\_AMT\_PAYMENT\_in\_\_8088\_8175\_\_15929\_28\_

82. StdDev\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_AMT\_PAYMENT\_in\_\_8088\_8175\_\_15929\_28\_

83. StdDev\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_NUMBER\_\_where\_NUM\_INSTALMENT\_NUMBER\_\_\_8\_5

84. StdDev\_previous\_application\_train\_csv\_RATE\_DOWN\_PAYMENT\_

85. Sum\_POS\_CASH\_balance\_train\_csv\_SK\_ID\_PREV\_\_where\_SK\_DPD\_\_\_\_0\_5

86. Sum\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

87. Sum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_DEBT\_\_where\_CREDIT\_TYPE\_\_\_\_Consumer\_credit

88. Sum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405

89. Sum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_OVERDUE\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed

90. Sum\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405

91. Sum\_bureau\_train\_csv\_DAYS\_ENDDATE\_FACT\_\_where\_CNT\_CREDIT\_PROLONG\_\_\_\_0\_5

92. Sum\_bureau\_train\_csv\_SK\_ID\_BUREAU\_\_where\_CREDIT\_TYPE\_\_\_\_Consumer\_credit

93. Sum\_credit\_card\_balance\_train\_csv\_CNT\_DRAWINGS\_ATM\_CURRENT\_\_where\_AMT\_INST\_MIN\_REGULARITY\_\_\_0\_0225

94. Sum\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45

95. LabelPAMT\_ANNUITY

96. LabelPAMT\_CREDIT

97. LabelPCODE\_GENDER

98. LabelPCount\_bureau\_train\_csv\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed

99. LabelPCount\_bureau\_train\_csv\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

100. LabelPCountDistinct\_bureau\_balance\_preprocessed\_train\_csv\_STATUS\_\_where\_STATUS\_not\_in\_\_C\_\_0\_\_X\_

101. LabelPCountDistinct\_credit\_card\_balance\_train\_csv\_NAME\_CONTRACT\_STATUS\_\_where\_AMT\_RECIVABLE\_\_\_0\_0225

102. LabelPCountDistinct\_previous\_application\_train\_csv\_CODE\_REJECT\_REASON\_

103. LabelPDAYS\_BIRTH

104. LabelPDAYS\_EMPLOYED

105. LabelPDEF\_30\_CNT\_SOCIAL\_CIRCLE

106. LabelPDEF\_60\_CNT\_SOCIAL\_CIRCLE

107. LabelPEXT\_SOURCE\_1

108. LabelPEXT\_SOURCE\_2

109. LabelPEXT\_SOURCE\_3

110. LabelPFLAG\_OWN\_CAR

111. LabelPLIVINGAREA\_AVG

112. LabelPMax\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_CNT\_INSTALMENT\_FUTURE\_\_\_\_7\_5

113. LabelPMax\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

114. LabelPMax\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

115. LabelPMax\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_DAYS\_CREDIT\_\_\_\_983\_5

116. LabelPMax\_bureau\_train\_csv\_DAYS\_CREDIT\_UPDATE\_\_where\_CREDIT\_DAY\_OVERDUE\_\_\_0\_5

117. LabelPMax\_credit\_card\_balance\_train\_csv\_CNT\_DRAWINGS\_CURRENT\_

118. LabelPMax\_installments\_payments\_train\_csv\_AMT\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_\_8088\_8175

119. LabelPMax\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_SK\_ID\_PREV\_\_\_\_1897795\_5

120. LabelPMax\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_

121. LabelPMax\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_369\_5

122. LabelPMax\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_\_830\_5

123. LabelPMean\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_CNT\_INSTALMENT\_\_\_24\_5

124. LabelPMean\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_SK\_ID\_PREV\_\_\_1897266

125. LabelPMean\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

126. LabelPMean\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_MONTHS\_BALANCE\_\_\_\_27\_5

127. LabelPMean\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_AMT\_CREDIT\_SUM\_LIMIT\_\_\_\_0\_0225

128. LabelPMean\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_CREDIT\_DAY\_OVERDUE\_\_\_\_0\_5

129. LabelPMean\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_\_where\_AMT\_CREDIT\_SUM\_\_\_\_124731\_405

130. LabelPMean\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_DEBT\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405

131. LabelPMean\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_\_0\_0675

132. LabelPMean\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_OVERDUE\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed

133. LabelPMean\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_CREDIT\_CURRENCY\_\_\_currency\_1

134. LabelPMean\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

135. LabelPMean\_credit\_card\_balance\_train\_csv\_AMT\_CREDIT\_LIMIT\_ACTUAL\_\_where\_AMT\_BALANCE\_\_\_\_0\_0225

136. LabelPMean\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45

137. LabelPMean\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_NUMBER\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45

138. LabelPMean\_previous\_application\_train\_csv\_DAYS\_FIRST\_DRAWING\_

139. LabelPMedian\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

140. LabelPMedian\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

141. LabelPMedian\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_MONTHS\_BALANCE\_\_\_\_27\_5

142. LabelPMedian\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_CNT\_CREDIT\_PROLONG\_\_\_\_0\_5

143. LabelPMedian\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_\_where\_AMT\_CREDIT\_SUM\_OVERDUE\_\_\_0\_0225

144. LabelPMedian\_bureau\_train\_csv\_DAYS\_CREDIT\_

145. LabelPMedian\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_CNT\_CREDIT\_PROLONG\_\_\_\_0\_5

146. LabelPMedian\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

147. LabelPMedian\_credit\_card\_balance\_train\_csv\_AMT\_RECIVABLE\_\_where\_SK\_DPD\_DEF\_\_\_\_0\_5

148. LabelPMedian\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_NUMBER\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45

149. LabelPMin\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_

150. LabelPMin\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_LIMIT\_\_\_0\_0225

151. LabelPMin\_bureau\_train\_csv\_DAYS\_CREDIT\_UPDATE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

152. LabelPMin\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_\_830\_5

153. LabelPMin\_previous\_application\_train\_csv\_HOUR\_APPR\_PROCESS\_START\_

154. LabelPMode\_bureau\_balance\_preprocessed\_train\_csv\_STATUS\_\_where\_STATUS\_not\_in\_\_C\_\_0\_\_X\_

155. LabelPMode\_bureau\_train\_csv\_CREDIT\_ACTIVE\_\_where\_CREDIT\_CURRENCY\_\_\_currency\_1

156. LabelPMode\_bureau\_train\_csv\_CREDIT\_ACTIVE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

157. LabelPMode\_previous\_application\_train\_csv\_NAME\_CONTRACT\_STATUS\_

158. LabelPMode\_previous\_application\_train\_csv\_NAME\_SELLER\_INDUSTRY\_

159. LabelPNAME\_CONTRACT\_TYPE

160. LabelPNAME\_EDUCATION\_TYPE

161. LabelPNAME\_INCOME\_TYPE

162. LabelPOCCUPATION\_TYPE

163. LabelPORGANIZATION\_TYPE

164. LabelPREGION\_RATING\_CLIENT

165. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_MONTHS\_BALANCE\_\_\_\_27\_5

166. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_DEF\_

167. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_SK\_ID\_PREV\_\_where\_CNT\_INSTALMENT\_FUTURE\_in\_\_3\_5\_\_7\_5\_

168. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_SK\_ID\_PREV\_\_where\_CNT\_INSTALMENT\_FUTURE\_in\_\_7\_5\_\_13\_5\_

169. LabelPStdDev\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_DEBT\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

170. LabelPStdDev\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

171. LabelPStdDev\_credit\_card\_balance\_train\_csv\_AMT\_DRAWINGS\_ATM\_CURRENT\_

172. LabelPStdDev\_installments\_payments\_train\_csv\_AMT\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_15929\_28

173. LabelPStdDev\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_AMT\_PAYMENT\_in\_\_8088\_8175\_\_15929\_28\_

174. LabelPStdDev\_previous\_application\_train\_csv\_RATE\_DOWN\_PAYMENT\_

175. LabelPSum\_POS\_CASH\_balance\_train\_csv\_SK\_ID\_PREV\_\_where\_SK\_DPD\_\_\_\_0\_5

176. LabelPSum\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

177. LabelPSum\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

178. LabelPSum\_bureau\_train\_csv\_SK\_ID\_BUREAU\_\_where\_DAYS\_CREDIT\_\_\_\_\_983\_5

179. LabelPSum\_credit\_card\_balance\_train\_csv\_CNT\_DRAWINGS\_ATM\_CURRENT\_\_where\_AMT\_INST\_MIN\_REGULARITY\_\_\_0\_0225

180. LabelPSum\_installments\_payments\_train\_csv\_AMT\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_15929\_28

181. LabelPSum\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_\_where\_DAYS\_INSTALMENT\_in\_\_\_1654\_5\_\_\_821\_5\_

182. LabelPSum\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45

183. LabelPSum\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_NUMBER\_\_where\_AMT\_PAYMENT\_\_\_8088\_8175

184. LabelPSum\_installments\_payments\_train\_csv\_SK\_ID\_PREV\_\_where\_AMT\_INSTALMENT\_\_\_16549\_6725

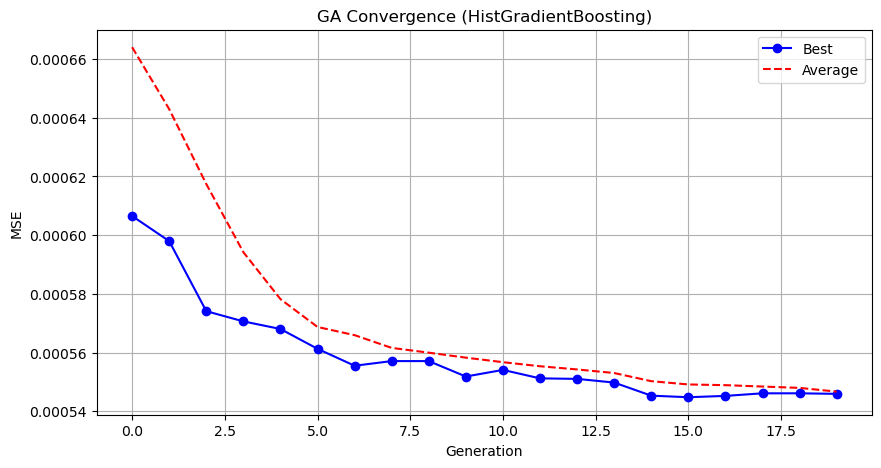
185. LabelPYEARS\_BEGINEXPLUATATION\_AVG

▶ Convergence progress:

- Initial MSE: 0.0006

- Final MSE: 0.0005

- Improvement: 10.0%



Genetic Algorithm completed successfully with MSE: 0.0005

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Running Particle Swarm Optimization with HistGradientBoosting...

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=== PARTICLE SWARM OPTIMIZATION ===

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[Initialization]

- Swarm size: 30 particles

- Iterations: 20

- Cognitive weight: 0.5

- Social weight: 0.5

- Inertia weight: 0.5

- Search space: 334 features

- Target: Minimize MSE using HistGradientBoosting

[Optimization Progress]

No constraints given.

Iteration 1: Best MSE = 0.000671

Best after iteration 1: [0.61982751 0.36476404 0.87920202 0.94411212 0.04363745 0.94793954

0.96923066 0.4143913 0.54412843 0.01251626 0.8005215 0.80469291

Stopping search: Swarm best objective change less than 0.0001

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=== OPTIMIZATION RESULTS ===

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▶ Best MSE achieved: 0.000604

▶ Time elapsed: 172.67 seconds

▶ Features selected: 175/334 (47.6% reduction)

▶ Selected features (with weights):

1. AMT\_ANNUITY (weight: 1.000)

2. AMT\_GOODS\_PRICE (weight: 1.000)

3. CODE\_GENDER (weight: 0.599)

4. DAYS\_EMPLOYED (weight: 0.757)

5. DAYS\_ID\_PUBLISH (weight: 1.000)

6. DEF\_30\_CNT\_SOCIAL\_CIRCLE (weight: 0.599)

7. EXT\_SOURCE\_2 (weight: 0.932)

8. EXT\_SOURCE\_3 (weight: 0.679)

9. FLAG\_EMP\_PHONE (weight: 0.804)

10. FLOORSMAX\_MEDI (weight: 1.000)

11. LIVINGAREA\_AVG (weight: 1.000)

12. NAME\_CONTRACT\_TYPE (weight: 0.863)

13. NAME\_EDUCATION\_TYPE (weight: 0.601)

14. NAME\_FAMILY\_STATUS (weight: 0.935)

15. OWN\_CAR\_AGE (weight: 0.649)

16. REG\_CITY\_NOT\_WORK\_CITY (weight: 0.856)

17. TARGET (weight: 1.000)

18. YEARS\_BEGINEXPLUATATION\_AVG (weight: 0.830)

19. Count\_POS\_CASH\_balance\_train\_csv\_\_where\_CNT\_INSTALMENT\_FUTURE\_in\_\_3\_5\_\_7\_5\_ (weight: 0.508)

20. Count\_bureau\_train\_csv\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed (weight: 0.628)

21. CountDistinct\_bureau\_balance\_preprocessed\_train\_csv\_STATUS\_\_where\_STATUS\_not\_in\_\_C\_\_0\_\_X\_ (weight: 0.814)

22. CountDistinct\_bureau\_train\_csv\_CREDIT\_ACTIVE\_\_where\_DAYS\_ENDDATE\_FACT\_\_\_\_\_1678\_5 (weight: 0.755)

23. CountDistinct\_previous\_application\_train\_csv\_CODE\_REJECT\_REASON\_ (weight: 1.000)

24. Max\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_CNT\_INSTALMENT\_FUTURE\_\_\_\_7\_5 (weight: 0.770)

25. Max\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_SK\_DPD\_\_\_0\_5 (weight: 0.560)

26. Max\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5 (weight: 1.000)

27. Max\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_DAYS\_CREDIT\_\_\_\_983\_5 (weight: 0.693)

28. Max\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5 (weight: 1.000)

29. Max\_bureau\_train\_csv\_DAYS\_CREDIT\_UPDATE\_\_where\_CREDIT\_DAY\_OVERDUE\_\_\_0\_5 (weight: 0.664)

30. Max\_credit\_card\_balance\_train\_csv\_CNT\_DRAWINGS\_CURRENT\_ (weight: 0.607)

31. Max\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_AMT\_INSTALMENT\_in\_\_8783\_3025\_\_16549\_6725\_ (weight: 1.000)

32. Max\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_NUM\_INSTALMENT\_VERSION\_in\_\_0\_5\_\_1\_5\_ (weight: 0.836)

33. Max\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_SK\_ID\_PREV\_\_\_\_1897795\_5 (weight: 0.600)

34. Max\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_369\_5 (weight: 0.977)

35. Max\_previous\_application\_train\_csv\_CNT\_PAYMENT\_ (weight: 1.000)

36. Mean\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_CNT\_INSTALMENT\_\_\_24\_5 (weight: 1.000)

37. Mean\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_MONTHS\_BALANCE\_\_\_\_27\_5 (weight: 0.922)

38. Mean\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_DEF\_\_where\_NAME\_CONTRACT\_STATUS\_\_\_Active (weight: 1.000)

39. Mean\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_AMT\_CREDIT\_SUM\_LIMIT\_\_\_\_0\_0225 (weight: 0.792)

40. Mean\_credit\_card\_balance\_train\_csv\_AMT\_CREDIT\_LIMIT\_ACTUAL\_\_where\_AMT\_BALANCE\_\_\_\_0\_0225 (weight: 1.000)

41. Mean\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_AMT\_INSTALMENT\_\_\_8783\_3025 (weight: 0.515)

42. Mean\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_NUM\_INSTALMENT\_VERSION\_\_\_\_1\_5 (weight: 0.802)

43. Mean\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45 (weight: 0.964)

44. Mean\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_369\_5 (weight: 1.000)

45. Mean\_previous\_application\_train\_csv\_DAYS\_FIRST\_DRAWING\_ (weight: 0.737)

46. Median\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5 (weight: 0.552)

47. Median\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_CNT\_CREDIT\_PROLONG\_\_\_\_0\_5 (weight: 0.643)

48. Median\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_CREDIT\_\_\_\_983\_5 (weight: 0.543)

49. Median\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5 (weight: 1.000)

50. Median\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_\_where\_AMT\_CREDIT\_SUM\_OVERDUE\_\_\_0\_0225 (weight: 0.629)

51. Median\_bureau\_train\_csv\_DAYS\_CREDIT\_ (weight: 0.853)

52. Median\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675 (weight: 0.627)

53. Median\_credit\_card\_balance\_train\_csv\_AMT\_RECIVABLE\_\_where\_SK\_DPD\_DEF\_\_\_\_0\_5 (weight: 0.639)

54. Median\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_NUMBER\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45 (weight: 0.548)

55. Median\_previous\_application\_train\_csv\_AMT\_DOWN\_PAYMENT\_ (weight: 1.000)

56. Median\_previous\_application\_train\_csv\_RATE\_DOWN\_PAYMENT\_ (weight: 0.659)

57. Min\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed (weight: 0.615)

58. Min\_bureau\_train\_csv\_DAYS\_CREDIT\_UPDATE\_\_where\_CREDIT\_TYPE\_\_\_Consumer\_credit (weight: 1.000)

59. Min\_bureau\_train\_csv\_DAYS\_CREDIT\_UPDATE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5 (weight: 0.792)

60. Min\_previous\_application\_train\_csv\_HOUR\_APPR\_PROCESS\_START\_ (weight: 0.891)

61. Min\_previous\_application\_train\_csv\_RATE\_DOWN\_PAYMENT\_ (weight: 0.576)

62. Mode\_bureau\_balance\_preprocessed\_train\_csv\_STATUS\_\_where\_STATUS\_not\_in\_\_C\_\_0\_\_X\_ (weight: 0.777)

63. Mode\_bureau\_train\_csv\_CREDIT\_ACTIVE\_\_where\_CREDIT\_CURRENCY\_\_\_currency\_1 (weight: 0.868)

64. Mode\_bureau\_train\_csv\_CREDIT\_TYPE\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675 (weight: 0.692)

65. Mode\_previous\_application\_train\_csv\_NAME\_CONTRACT\_STATUS\_ (weight: 0.553)

66. StdDev\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_MONTHS\_BALANCE\_\_\_\_27\_5 (weight: 0.551)

67. StdDev\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_CNT\_INSTALMENT\_FUTURE\_in\_\_3\_5\_\_7\_5\_ (weight: 1.000)

68. StdDev\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_DEF\_\_where\_CNT\_INSTALMENT\_\_\_24\_5 (weight: 0.583)

69. StdDev\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_ENDDATE\_FACT\_\_\_\_\_1678\_5 (weight: 1.000)

70. StdDev\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_DEBT\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5 (weight: 0.804)

71. StdDev\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405 (weight: 0.612)

72. StdDev\_installments\_payments\_train\_csv\_AMT\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_15929\_28 (weight: 0.600)

73. StdDev\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_\_where\_AMT\_PAYMENT\_in\_\_8088\_8175\_\_15929\_28\_ (weight: 0.659)

74. StdDev\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_AMT\_PAYMENT\_in\_\_8088\_8175\_\_15929\_28\_ (weight: 0.898)

75. StdDev\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_VERSION\_\_where\_NUM\_INSTALMENT\_VERSION\_\_\_1\_5 (weight: 0.636)

76. Sum\_POS\_CASH\_balance\_train\_csv\_SK\_ID\_PREV\_\_where\_SK\_DPD\_\_\_\_0\_5 (weight: 1.000)

77. Sum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_DEBT\_\_where\_CREDIT\_TYPE\_\_\_\_Consumer\_credit (weight: 0.671)

78. Sum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5 (weight: 0.559)

79. Sum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_OVERDUE\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed (weight: 0.922)

80. Sum\_bureau\_train\_csv\_SK\_ID\_BUREAU\_\_where\_DAYS\_CREDIT\_\_\_\_\_983\_5 (weight: 0.876)

81. Sum\_bureau\_train\_csv\_SK\_ID\_BUREAU\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5 (weight: 1.000)

82. Sum\_installments\_payments\_train\_csv\_AMT\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_15929\_28 (weight: 1.000)

83. Sum\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45 (weight: 0.519)

84. Sum\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_NUMBER\_\_where\_AMT\_PAYMENT\_\_\_8088\_8175 (weight: 0.834)

85. LabelPAMT\_CREDIT (weight: 0.680)

86. LabelPCODE\_GENDER (weight: 0.517)

87. LabelPCount\_POS\_CASH\_balance\_train\_csv\_\_where\_CNT\_INSTALMENT\_FUTURE\_in\_\_3\_5\_\_7\_5\_ (weight: 1.000)

88. LabelPCount\_POS\_CASH\_balance\_train\_csv\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5 (weight: 0.640)

89. LabelPCount\_bureau\_train\_csv\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675 (weight: 0.663)

90. LabelPCount\_bureau\_train\_csv\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed (weight: 0.709)

91. LabelPCountDistinct\_previous\_application\_train\_csv\_CODE\_REJECT\_REASON\_ (weight: 0.525)

92. LabelPCountDistinct\_previous\_application\_train\_csv\_NAME\_CONTRACT\_STATUS\_ (weight: 0.744)

93. LabelPDAYS\_BIRTH (weight: 0.729)

94. LabelPEXT\_SOURCE\_1 (weight: 1.000)

95. LabelPEXT\_SOURCE\_2 (weight: 0.509)

96. LabelPEXT\_SOURCE\_3 (weight: 0.783)

97. LabelPFLAG\_DOCUMENT\_3 (weight: 0.721)

98. LabelPFLAG\_EMP\_PHONE (weight: 0.741)

99. LabelPFLOORSMAX\_MODE (weight: 0.578)

100. LabelPLIVINGAPARTMENTS\_MEDI (weight: 0.503)

101. LabelPMax\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5 (weight: 0.739)

102. LabelPMax\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5 (weight: 0.676)

103. LabelPMax\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5 (weight: 0.836)

104. LabelPMax\_bureau\_train\_csv\_CREDIT\_DAY\_OVERDUE\_\_where\_AMT\_CREDIT\_SUM\_OVERDUE\_\_\_0\_0225 (weight: 0.610)

105. LabelPMax\_bureau\_train\_csv\_SK\_ID\_BUREAU\_\_where\_AMT\_CREDIT\_SUM\_OVERDUE\_\_\_\_0\_0225 (weight: 0.825)

106. LabelPMax\_installments\_payments\_train\_csv\_AMT\_INSTALMENT\_ (weight: 0.619)

107. LabelPMax\_installments\_payments\_train\_csv\_AMT\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_\_8088\_8175 (weight: 0.598)

108. LabelPMax\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_SK\_ID\_PREV\_\_\_\_1897795\_5 (weight: 0.547)

109. LabelPMax\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_ (weight: 0.712)

110. LabelPMax\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_369\_5 (weight: 0.680)

111. LabelPMax\_previous\_application\_train\_csv\_CNT\_PAYMENT\_ (weight: 0.519)

112. LabelPMean\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5 (weight: 0.705)

113. LabelPMean\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_DEF\_\_where\_NAME\_CONTRACT\_STATUS\_\_\_Active (weight: 0.741)

114. LabelPMean\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_CREDIT\_DAY\_OVERDUE\_\_\_\_0\_5 (weight: 0.801)

115. LabelPMean\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_\_where\_AMT\_CREDIT\_SUM\_\_\_\_124731\_405 (weight: 1.000)

116. LabelPMean\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_\_0\_0675 (weight: 1.000)

117. LabelPMean\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_DAYS\_CREDIT\_\_\_\_983\_5 (weight: 1.000)

118. LabelPMean\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5 (weight: 0.697)

119. LabelPMean\_credit\_card\_balance\_train\_csv\_AMT\_CREDIT\_LIMIT\_ACTUAL\_\_where\_AMT\_BALANCE\_\_\_\_0\_0225 (weight: 0.666)

120. LabelPMean\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_AMT\_INSTALMENT\_\_\_8783\_3025 (weight: 0.525)

121. LabelPMean\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_NUM\_INSTALMENT\_VERSION\_\_\_\_1\_5 (weight: 0.557)

122. LabelPMean\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45 (weight: 0.910)

123. LabelPMean\_previous\_application\_train\_csv\_DAYS\_FIRST\_DRAWING\_ (weight: 0.584)

124. LabelPMedian\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5 (weight: 0.763)

125. LabelPMedian\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5 (weight: 0.986)

126. LabelPMedian\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_CREDIT\_\_\_\_983\_5 (weight: 0.591)

127. LabelPMedian\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5 (weight: 1.000)

128. LabelPMedian\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_\_where\_AMT\_CREDIT\_SUM\_OVERDUE\_\_\_0\_0225 (weight: 1.000)

129. LabelPMedian\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675 (weight: 0.835)

130. LabelPMedian\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_CNT\_CREDIT\_PROLONG\_\_\_\_0\_5 (weight: 0.554)

131. LabelPMedian\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5 (weight: 0.728)

132. LabelPMedian\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_NUM\_INSTALMENT\_VERSION\_in\_\_0\_5\_\_1\_5\_ (weight: 0.688)

133. LabelPMedian\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_\_1663\_5 (weight: 1.000)

134. LabelPMedian\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_NUMBER\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45 (weight: 1.000)

135. LabelPMedian\_previous\_application\_train\_csv\_RATE\_DOWN\_PAYMENT\_ (weight: 1.000)

136. LabelPMin\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675 (weight: 0.842)

137. LabelPMin\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed (weight: 1.000)

138. LabelPMin\_bureau\_train\_csv\_DAYS\_CREDIT\_UPDATE\_\_where\_CREDIT\_TYPE\_\_\_Consumer\_credit (weight: 1.000)

139. LabelPMin\_bureau\_train\_csv\_DAYS\_CREDIT\_UPDATE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5 (weight: 0.903)

140. LabelPMin\_credit\_card\_balance\_train\_csv\_AMT\_DRAWINGS\_OTHER\_CURRENT\_ (weight: 0.773)

141. LabelPMin\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_AMT\_INSTALMENT\_\_\_8783\_3025 (weight: 0.971)

142. LabelPMin\_previous\_application\_train\_csv\_RATE\_DOWN\_PAYMENT\_ (weight: 1.000)

143. LabelPMode\_bureau\_train\_csv\_CREDIT\_ACTIVE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5 (weight: 0.698)

144. LabelPMode\_previous\_application\_train\_csv\_CODE\_REJECT\_REASON\_ (weight: 0.782)

145. LabelPNAME\_CONTRACT\_TYPE (weight: 1.000)

146. LabelPNAME\_FAMILY\_STATUS (weight: 0.785)

147. LabelPORGANIZATION\_TYPE (weight: 0.647)

148. LabelPREGION\_RATING\_CLIENT\_W\_CITY (weight: 0.851)

149. LabelPREG\_CITY\_NOT\_LIVE\_CITY (weight: 1.000)

150. LabelPREG\_CITY\_NOT\_WORK\_CITY (weight: 0.788)

151. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_MONTHS\_BALANCE\_\_\_\_27\_5 (weight: 0.554)

152. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_MONTHS\_BALANCE\_\_\_\_\_27\_5 (weight: 1.000)

153. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_DEF\_ (weight: 0.711)

154. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_SK\_ID\_PREV\_\_where\_CNT\_INSTALMENT\_FUTURE\_in\_\_3\_5\_\_7\_5\_ (weight: 0.565)

155. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_SK\_ID\_PREV\_\_where\_CNT\_INSTALMENT\_FUTURE\_in\_\_7\_5\_\_13\_5\_ (weight: 0.991)

156. LabelPStdDev\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405 (weight: 0.586)

157. LabelPStdDev\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675 (weight: 1.000)

158. LabelPStdDev\_credit\_card\_balance\_train\_csv\_AMT\_DRAWINGS\_ATM\_CURRENT\_ (weight: 0.834)

159. LabelPStdDev\_installments\_payments\_train\_csv\_AMT\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_15929\_28 (weight: 0.639)

160. LabelPStdDev\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_\_where\_AMT\_PAYMENT\_in\_\_8088\_8175\_\_15929\_28\_ (weight: 0.551)

161. LabelPStdDev\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_AMT\_PAYMENT\_in\_\_8088\_8175\_\_15929\_28\_ (weight: 0.837)

162. LabelPStdDev\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_NUMBER\_\_where\_NUM\_INSTALMENT\_NUMBER\_\_\_8\_5 (weight: 0.801)

163. LabelPStdDev\_previous\_application\_train\_csv\_RATE\_DOWN\_PAYMENT\_ (weight: 0.624)

164. LabelPSum\_POS\_CASH\_balance\_train\_csv\_SK\_ID\_PREV\_\_where\_SK\_DPD\_\_\_\_0\_5 (weight: 0.526)

165. LabelPSum\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675 (weight: 0.954)

166. LabelPSum\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5 (weight: 0.859)

167. LabelPSum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_DEBT\_\_where\_CREDIT\_TYPE\_\_\_\_Consumer\_credit (weight: 0.552)

168. LabelPSum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405 (weight: 0.578)

169. LabelPSum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5 (weight: 0.780)

170. LabelPSum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_OVERDUE\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed (weight: 1.000)

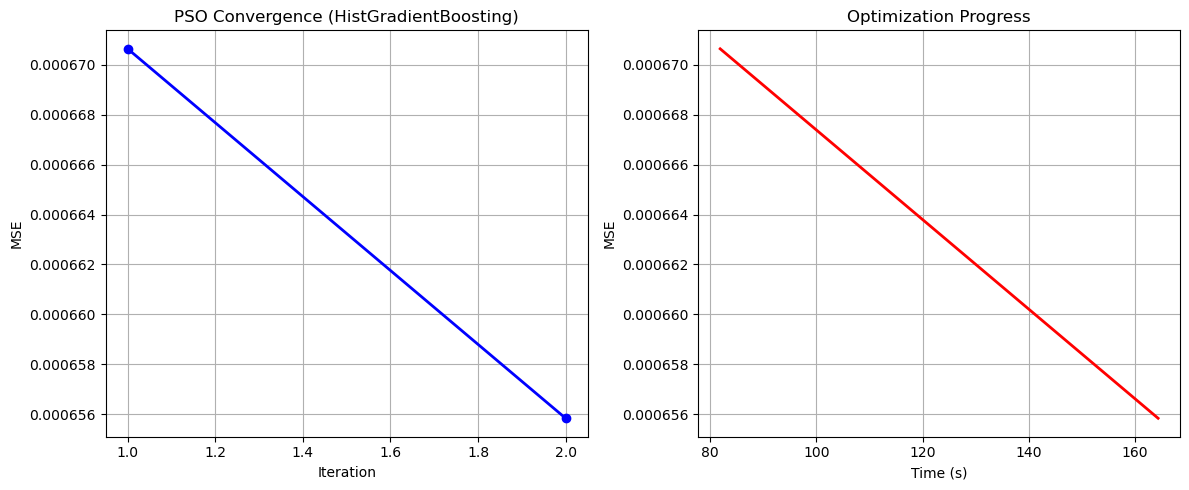
171. LabelPSum\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405 (weight: 1.000)

172. LabelPSum\_bureau\_train\_csv\_SK\_ID\_BUREAU\_\_where\_CREDIT\_TYPE\_\_\_\_Consumer\_credit (weight: 0.586)

173. LabelPSum\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_NUMBER\_\_where\_AMT\_PAYMENT\_\_\_8088\_8175 (weight: 0.912)

174. LabelPSum\_installments\_payments\_train\_csv\_SK\_ID\_PREV\_\_where\_AMT\_INSTALMENT\_\_\_16549\_6725 (weight: 0.886)

175. LabelPYEARS\_BEGINEXPLUATATION\_AVG (weight: 0.674)



Particle Swarm Optimization completed successfully with MSE: 0.0006

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Running Whale Optimization with HistGradientBoosting...

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=== WHALE OPTIMIZATION ALGORITHM ===

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[Initialization]

- Population: 30 whales

- Max iterations: 20

- Spiral coefficient (b): 1.0

- Search space: 334 features

- Target: Minimize MSE using HistGradientBoosting

[Optimization Progress]

Iter 20/20 | Best MSE: 0.000534

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=== OPTIMIZATION RESULTS ===

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▶ Best MSE achieved: 0.000534

▶ Time elapsed: 2539.50 seconds

▶ Features selected: 309/334 (7.5% reduction)

▶ Selected features:

1. AMT\_ANNUITY

2. AMT\_CREDIT

3. AMT\_GOODS\_PRICE

4. CODE\_GENDER

5. DAYS\_BIRTH

6. DAYS\_ID\_PUBLISH

7. DEF\_30\_CNT\_SOCIAL\_CIRCLE

8. DEF\_60\_CNT\_SOCIAL\_CIRCLE

9. EXT\_SOURCE\_1

10. EXT\_SOURCE\_2

11. EXT\_SOURCE\_3

12. FLAG\_DOCUMENT\_3

13. FLAG\_EMP\_PHONE

14. FLAG\_OWN\_CAR

15. FLOORSMAX\_MEDI

16. FLOORSMAX\_MODE

17. FLOORSMIN\_MEDI

18. NAME\_CONTRACT\_TYPE

19. NAME\_EDUCATION\_TYPE

20. NAME\_INCOME\_TYPE

21. OCCUPATION\_TYPE

22. ORGANIZATION\_TYPE

23. OWN\_CAR\_AGE

24. REGION\_POPULATION\_RELATIVE

25. REGION\_RATING\_CLIENT

26. REGION\_RATING\_CLIENT\_W\_CITY

27. REG\_CITY\_NOT\_LIVE\_CITY

28. SK\_ID\_CURR

29. TARGET

30. YEARS\_BEGINEXPLUATATION\_AVG

31. Count\_POS\_CASH\_balance\_train\_csv\_\_where\_CNT\_INSTALMENT\_FUTURE\_in\_\_3\_5\_\_7\_5\_

32. Count\_POS\_CASH\_balance\_train\_csv\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

33. Count\_bureau\_train\_csv\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

34. Count\_bureau\_train\_csv\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed

35. Count\_bureau\_train\_csv\_\_where\_DAYS\_CREDIT\_\_\_\_983\_5

36. Count\_bureau\_train\_csv\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

37. CountDistinct\_bureau\_balance\_preprocessed\_train\_csv\_STATUS\_\_where\_STATUS\_not\_in\_\_C\_\_0\_\_X\_

38. CountDistinct\_bureau\_train\_csv\_CREDIT\_ACTIVE\_\_where\_DAYS\_ENDDATE\_FACT\_\_\_\_\_1678\_5

39. CountDistinct\_credit\_card\_balance\_train\_csv\_NAME\_CONTRACT\_STATUS\_\_where\_AMT\_RECIVABLE\_\_\_0\_0225

40. CountDistinct\_previous\_application\_train\_csv\_CODE\_REJECT\_REASON\_

41. Max\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_CNT\_INSTALMENT\_FUTURE\_\_\_\_7\_5

42. Max\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_SK\_DPD\_\_\_0\_5

43. Max\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

44. Max\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

45. Max\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

46. Max\_bureau\_train\_csv\_CREDIT\_DAY\_OVERDUE\_\_where\_AMT\_CREDIT\_SUM\_OVERDUE\_\_\_0\_0225

47. Max\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

48. Max\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_DAYS\_CREDIT\_\_\_\_983\_5

49. Max\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

50. Max\_bureau\_train\_csv\_DAYS\_CREDIT\_UPDATE\_\_where\_CREDIT\_DAY\_OVERDUE\_\_\_0\_5

51. Max\_bureau\_train\_csv\_SK\_ID\_BUREAU\_\_where\_AMT\_CREDIT\_SUM\_OVERDUE\_\_\_\_0\_0225

52. Max\_credit\_card\_balance\_train\_csv\_CNT\_DRAWINGS\_CURRENT\_

53. Max\_installments\_payments\_train\_csv\_AMT\_INSTALMENT\_

54. Max\_installments\_payments\_train\_csv\_AMT\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_\_8088\_8175

55. Max\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_AMT\_INSTALMENT\_in\_\_8783\_3025\_\_16549\_6725\_

56. Max\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_NUM\_INSTALMENT\_VERSION\_in\_\_0\_5\_\_1\_5\_

57. Max\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_SK\_ID\_PREV\_\_\_\_1897795\_5

58. Max\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_

59. Max\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_369\_5

60. Max\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_\_830\_5

61. Max\_previous\_application\_train\_csv\_AMT\_DOWN\_PAYMENT\_

62. Max\_previous\_application\_train\_csv\_CNT\_PAYMENT\_

63. Mean\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_CNT\_INSTALMENT\_\_\_24\_5

64. Mean\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_SK\_ID\_PREV\_\_\_\_1897266

65. Mean\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_SK\_ID\_PREV\_\_\_1897266

66. Mean\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

67. Mean\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_MONTHS\_BALANCE\_\_\_\_27\_5

68. Mean\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_DEF\_\_where\_NAME\_CONTRACT\_STATUS\_\_\_Active

69. Mean\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_AMT\_CREDIT\_SUM\_LIMIT\_\_\_\_0\_0225

70. Mean\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_CREDIT\_DAY\_OVERDUE\_\_\_\_0\_5

71. Mean\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_\_where\_AMT\_CREDIT\_SUM\_\_\_\_124731\_405

72. Mean\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_DEBT\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405

73. Mean\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_\_0\_0675

74. Mean\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_OVERDUE\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed

75. Mean\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_CREDIT\_CURRENCY\_\_\_currency\_1

76. Mean\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_DAYS\_CREDIT\_\_\_\_983\_5

77. Mean\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

78. Mean\_credit\_card\_balance\_train\_csv\_AMT\_CREDIT\_LIMIT\_ACTUAL\_\_where\_AMT\_BALANCE\_\_\_\_0\_0225

79. Mean\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_AMT\_INSTALMENT\_\_\_8783\_3025

80. Mean\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_NUM\_INSTALMENT\_VERSION\_\_\_\_1\_5

81. Mean\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45

82. Mean\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_NUMBER\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45

83. Mean\_previous\_application\_train\_csv\_DAYS\_FIRST\_DRAWING\_

84. Median\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

85. Median\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

86. Median\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_MONTHS\_BALANCE\_\_\_\_27\_5

87. Median\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_CNT\_CREDIT\_PROLONG\_\_\_\_0\_5

88. Median\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_CREDIT\_\_\_\_983\_5

89. Median\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

90. Median\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_\_where\_AMT\_CREDIT\_SUM\_OVERDUE\_\_\_0\_0225

91. Median\_bureau\_train\_csv\_DAYS\_CREDIT\_

92. Median\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

93. Median\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_CNT\_CREDIT\_PROLONG\_\_\_\_0\_5

94. Median\_credit\_card\_balance\_train\_csv\_AMT\_RECIVABLE\_\_where\_SK\_DPD\_DEF\_\_\_\_0\_5

95. Median\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_\_1663\_5

96. Median\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_NUMBER\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45

97. Median\_previous\_application\_train\_csv\_AMT\_DOWN\_PAYMENT\_

98. Median\_previous\_application\_train\_csv\_RATE\_DOWN\_PAYMENT\_

99. Min\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_

100. Min\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed

101. Min\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

102. Min\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_LIMIT\_\_\_0\_0225

103. Min\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

104. Min\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed

105. Min\_bureau\_train\_csv\_DAYS\_CREDIT\_UPDATE\_\_where\_CREDIT\_TYPE\_\_\_Consumer\_credit

106. Min\_bureau\_train\_csv\_DAYS\_CREDIT\_UPDATE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

107. Min\_credit\_card\_balance\_train\_csv\_AMT\_DRAWINGS\_OTHER\_CURRENT\_

108. Min\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_AMT\_INSTALMENT\_\_\_8783\_3025

109. Min\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_\_830\_5

110. Min\_previous\_application\_train\_csv\_HOUR\_APPR\_PROCESS\_START\_

111. Min\_previous\_application\_train\_csv\_RATE\_DOWN\_PAYMENT\_

112. Mode\_bureau\_balance\_preprocessed\_train\_csv\_STATUS\_\_where\_STATUS\_not\_in\_\_C\_\_0\_\_X\_

113. Mode\_bureau\_train\_csv\_CREDIT\_ACTIVE\_\_where\_CREDIT\_CURRENCY\_\_\_currency\_1

114. Mode\_bureau\_train\_csv\_CREDIT\_ACTIVE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

115. Mode\_bureau\_train\_csv\_CREDIT\_TYPE\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

116. Mode\_previous\_application\_train\_csv\_NAME\_CONTRACT\_STATUS\_

117. Mode\_previous\_application\_train\_csv\_NAME\_SELLER\_INDUSTRY\_

118. StdDev\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_MONTHS\_BALANCE\_\_\_\_27\_5

119. StdDev\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_CNT\_INSTALMENT\_FUTURE\_in\_\_3\_5\_\_7\_5\_

120. StdDev\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_MONTHS\_BALANCE\_\_\_\_\_27\_5

121. StdDev\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_CNT\_INSTALMENT\_\_\_\_12\_5

122. StdDev\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_DEF\_

123. StdDev\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_DEF\_\_where\_CNT\_INSTALMENT\_\_\_24\_5

124. StdDev\_POS\_CASH\_balance\_train\_csv\_SK\_ID\_PREV\_\_where\_CNT\_INSTALMENT\_FUTURE\_in\_\_7\_5\_\_13\_5\_

125. StdDev\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405

126. StdDev\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_ENDDATE\_FACT\_\_\_\_\_1678\_5

127. StdDev\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_DEBT\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

128. StdDev\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405

129. StdDev\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

130. StdDev\_credit\_card\_balance\_train\_csv\_AMT\_DRAWINGS\_ATM\_CURRENT\_

131. StdDev\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_AMT\_INSTALMENT\_in\_\_8783\_3025\_\_16549\_6725\_

132. StdDev\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_\_where\_AMT\_PAYMENT\_in\_\_8088\_8175\_\_15929\_28\_

133. StdDev\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_AMT\_PAYMENT\_in\_\_8088\_8175\_\_15929\_28\_

134. StdDev\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_NUMBER\_\_where\_NUM\_INSTALMENT\_NUMBER\_\_\_8\_5

135. StdDev\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_VERSION\_\_where\_NUM\_INSTALMENT\_VERSION\_\_\_1\_5

136. StdDev\_previous\_application\_train\_csv\_RATE\_DOWN\_PAYMENT\_

137. Sum\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_CNT\_INSTALMENT\_\_\_24\_5

138. Sum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_DEBT\_\_where\_CREDIT\_TYPE\_\_\_\_Consumer\_credit

139. Sum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405

140. Sum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

141. Sum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_OVERDUE\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed

142. Sum\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405

143. Sum\_bureau\_train\_csv\_DAYS\_ENDDATE\_FACT\_\_where\_CNT\_CREDIT\_PROLONG\_\_\_\_0\_5

144. Sum\_bureau\_train\_csv\_SK\_ID\_BUREAU\_\_where\_CREDIT\_TYPE\_\_\_\_Consumer\_credit

145. Sum\_bureau\_train\_csv\_SK\_ID\_BUREAU\_\_where\_DAYS\_CREDIT\_\_\_\_\_983\_5

146. Sum\_credit\_card\_balance\_train\_csv\_CNT\_DRAWINGS\_ATM\_CURRENT\_\_where\_AMT\_INST\_MIN\_REGULARITY\_\_\_0\_0225

147. Sum\_installments\_payments\_train\_csv\_AMT\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_15929\_28

148. Sum\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_\_where\_DAYS\_INSTALMENT\_in\_\_\_1654\_5\_\_\_821\_5\_

149. Sum\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45

150. Sum\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_NUMBER\_\_where\_AMT\_PAYMENT\_\_\_8088\_8175

151. Sum\_installments\_payments\_train\_csv\_SK\_ID\_PREV\_\_where\_AMT\_INSTALMENT\_\_\_16549\_6725

152. LabelPAMT\_ANNUITY

153. LabelPAMT\_CREDIT

154. LabelPAMT\_GOODS\_PRICE

155. LabelPCODE\_GENDER

156. LabelPCount\_POS\_CASH\_balance\_train\_csv\_\_where\_CNT\_INSTALMENT\_FUTURE\_in\_\_3\_5\_\_7\_5\_

157. LabelPCount\_POS\_CASH\_balance\_train\_csv\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

158. LabelPCount\_bureau\_train\_csv\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

159. LabelPCount\_bureau\_train\_csv\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed

160. LabelPCount\_bureau\_train\_csv\_\_where\_DAYS\_CREDIT\_\_\_\_983\_5

161. LabelPCount\_bureau\_train\_csv\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

162. LabelPCountDistinct\_bureau\_balance\_preprocessed\_train\_csv\_STATUS\_\_where\_STATUS\_not\_in\_\_C\_\_0\_\_X\_

163. LabelPCountDistinct\_bureau\_train\_csv\_CREDIT\_ACTIVE\_\_where\_DAYS\_ENDDATE\_FACT\_\_\_\_\_1678\_5

164. LabelPCountDistinct\_credit\_card\_balance\_train\_csv\_NAME\_CONTRACT\_STATUS\_\_where\_AMT\_RECIVABLE\_\_\_0\_0225

165. LabelPCountDistinct\_previous\_application\_train\_csv\_CODE\_REJECT\_REASON\_

166. LabelPCountDistinct\_previous\_application\_train\_csv\_NAME\_CONTRACT\_STATUS\_

167. LabelPDAYS\_BIRTH

168. LabelPDAYS\_EMPLOYED

169. LabelPDAYS\_ID\_PUBLISH

170. LabelPDEF\_30\_CNT\_SOCIAL\_CIRCLE

171. LabelPDEF\_60\_CNT\_SOCIAL\_CIRCLE

172. LabelPEXT\_SOURCE\_1

173. LabelPEXT\_SOURCE\_2

174. LabelPEXT\_SOURCE\_3

175. LabelPFLAG\_DOCUMENT\_3

176. LabelPFLAG\_EMP\_PHONE

177. LabelPFLAG\_OWN\_CAR

178. LabelPFLOORSMAX\_MEDI

179. LabelPFLOORSMAX\_MODE

180. LabelPFLOORSMIN\_MEDI

181. LabelPLIVINGAPARTMENTS\_MEDI

182. LabelPLIVINGAREA\_AVG

183. LabelPMax\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_CNT\_INSTALMENT\_FUTURE\_\_\_\_7\_5

184. LabelPMax\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_SK\_DPD\_\_\_0\_5

185. LabelPMax\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

186. LabelPMax\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

187. LabelPMax\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

188. LabelPMax\_bureau\_train\_csv\_CREDIT\_DAY\_OVERDUE\_\_where\_AMT\_CREDIT\_SUM\_OVERDUE\_\_\_0\_0225

189. LabelPMax\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

190. LabelPMax\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_DAYS\_CREDIT\_\_\_\_983\_5

191. LabelPMax\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

192. LabelPMax\_bureau\_train\_csv\_DAYS\_CREDIT\_UPDATE\_\_where\_CREDIT\_DAY\_OVERDUE\_\_\_0\_5

193. LabelPMax\_bureau\_train\_csv\_SK\_ID\_BUREAU\_\_where\_AMT\_CREDIT\_SUM\_OVERDUE\_\_\_\_0\_0225

194. LabelPMax\_credit\_card\_balance\_train\_csv\_CNT\_DRAWINGS\_CURRENT\_

195. LabelPMax\_installments\_payments\_train\_csv\_AMT\_INSTALMENT\_

196. LabelPMax\_installments\_payments\_train\_csv\_AMT\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_\_8088\_8175

197. LabelPMax\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_AMT\_INSTALMENT\_in\_\_8783\_3025\_\_16549\_6725\_

198. LabelPMax\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_NUM\_INSTALMENT\_VERSION\_in\_\_0\_5\_\_1\_5\_

199. LabelPMax\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_SK\_ID\_PREV\_\_\_\_1897795\_5

200. LabelPMax\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_

201. LabelPMax\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_369\_5

202. LabelPMax\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_\_830\_5

203. LabelPMax\_previous\_application\_train\_csv\_AMT\_DOWN\_PAYMENT\_

204. LabelPMax\_previous\_application\_train\_csv\_CNT\_PAYMENT\_

205. LabelPMean\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_CNT\_INSTALMENT\_\_\_24\_5

206. LabelPMean\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_SK\_ID\_PREV\_\_\_\_1897266

207. LabelPMean\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_SK\_ID\_PREV\_\_\_1897266

208. LabelPMean\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

209. LabelPMean\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_MONTHS\_BALANCE\_\_\_\_27\_5

210. LabelPMean\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_DEF\_\_where\_NAME\_CONTRACT\_STATUS\_\_\_Active

211. LabelPMean\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_AMT\_CREDIT\_SUM\_LIMIT\_\_\_\_0\_0225

212. LabelPMean\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_CREDIT\_DAY\_OVERDUE\_\_\_\_0\_5

213. LabelPMean\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

214. LabelPMean\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_DEBT\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405

215. LabelPMean\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_\_0\_0675

216. LabelPMean\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_OVERDUE\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed

217. LabelPMean\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_CREDIT\_CURRENCY\_\_\_currency\_1

218. LabelPMean\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_DAYS\_CREDIT\_\_\_\_983\_5

219. LabelPMean\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

220. LabelPMean\_credit\_card\_balance\_train\_csv\_AMT\_CREDIT\_LIMIT\_ACTUAL\_\_where\_AMT\_BALANCE\_\_\_\_0\_0225

221. LabelPMean\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_AMT\_INSTALMENT\_\_\_8783\_3025

222. LabelPMean\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_NUM\_INSTALMENT\_VERSION\_\_\_\_1\_5

223. LabelPMean\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45

224. LabelPMean\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_369\_5

225. LabelPMean\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_NUMBER\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45

226. LabelPMean\_previous\_application\_train\_csv\_DAYS\_FIRST\_DRAWING\_

227. LabelPMedian\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

228. LabelPMedian\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

229. LabelPMedian\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_CREDIT\_\_\_\_983\_5

230. LabelPMedian\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

231. LabelPMedian\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_\_where\_AMT\_CREDIT\_SUM\_OVERDUE\_\_\_0\_0225

232. LabelPMedian\_bureau\_train\_csv\_DAYS\_CREDIT\_

233. LabelPMedian\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

234. LabelPMedian\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

235. LabelPMedian\_credit\_card\_balance\_train\_csv\_AMT\_RECIVABLE\_\_where\_SK\_DPD\_DEF\_\_\_\_0\_5

236. LabelPMedian\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_NUM\_INSTALMENT\_VERSION\_in\_\_0\_5\_\_1\_5\_

237. LabelPMedian\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_\_1663\_5

238. LabelPMedian\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_NUMBER\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45

239. LabelPMedian\_previous\_application\_train\_csv\_AMT\_DOWN\_PAYMENT\_

240. LabelPMedian\_previous\_application\_train\_csv\_RATE\_DOWN\_PAYMENT\_

241. LabelPMin\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_

242. LabelPMin\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed

243. LabelPMin\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

244. LabelPMin\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_LIMIT\_\_\_0\_0225

245. LabelPMin\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed

246. LabelPMin\_bureau\_train\_csv\_DAYS\_CREDIT\_UPDATE\_\_where\_CREDIT\_TYPE\_\_\_Consumer\_credit

247. LabelPMin\_bureau\_train\_csv\_DAYS\_CREDIT\_UPDATE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

248. LabelPMin\_credit\_card\_balance\_train\_csv\_AMT\_DRAWINGS\_OTHER\_CURRENT\_

249. LabelPMin\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_AMT\_INSTALMENT\_\_\_8783\_3025

250. LabelPMin\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_\_830\_5

251. LabelPMin\_previous\_application\_train\_csv\_HOUR\_APPR\_PROCESS\_START\_

252. LabelPMin\_previous\_application\_train\_csv\_RATE\_DOWN\_PAYMENT\_

253. LabelPMode\_bureau\_balance\_preprocessed\_train\_csv\_STATUS\_\_where\_STATUS\_not\_in\_\_C\_\_0\_\_X\_

254. LabelPMode\_bureau\_train\_csv\_CREDIT\_ACTIVE\_\_where\_CREDIT\_CURRENCY\_\_\_currency\_1

255. LabelPMode\_bureau\_train\_csv\_CREDIT\_ACTIVE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

256. LabelPMode\_bureau\_train\_csv\_CREDIT\_TYPE\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

257. LabelPMode\_previous\_application\_train\_csv\_CODE\_REJECT\_REASON\_

258. LabelPMode\_previous\_application\_train\_csv\_NAME\_CONTRACT\_STATUS\_

259. LabelPMode\_previous\_application\_train\_csv\_NAME\_SELLER\_INDUSTRY\_

260. LabelPNAME\_CONTRACT\_TYPE

261. LabelPNAME\_EDUCATION\_TYPE

262. LabelPNAME\_FAMILY\_STATUS

263. LabelPNAME\_INCOME\_TYPE

264. LabelPOCCUPATION\_TYPE

265. LabelPORGANIZATION\_TYPE

266. LabelPOWN\_CAR\_AGE

267. LabelPREGION\_RATING\_CLIENT

268. LabelPREGION\_RATING\_CLIENT\_W\_CITY

269. LabelPREG\_CITY\_NOT\_LIVE\_CITY

270. LabelPREG\_CITY\_NOT\_WORK\_CITY

271. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_MONTHS\_BALANCE\_\_\_\_27\_5

272. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_CNT\_INSTALMENT\_FUTURE\_in\_\_3\_5\_\_7\_5\_

273. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_MONTHS\_BALANCE\_\_\_\_\_27\_5

274. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_CNT\_INSTALMENT\_\_\_\_12\_5

275. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_DEF\_

276. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_DEF\_\_where\_CNT\_INSTALMENT\_\_\_24\_5

277. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_SK\_ID\_PREV\_\_where\_CNT\_INSTALMENT\_FUTURE\_in\_\_3\_5\_\_7\_5\_

278. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_SK\_ID\_PREV\_\_where\_CNT\_INSTALMENT\_FUTURE\_in\_\_7\_5\_\_13\_5\_

279. LabelPStdDev\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405

280. LabelPStdDev\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_ENDDATE\_FACT\_\_\_\_\_1678\_5

281. LabelPStdDev\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_DEBT\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

282. LabelPStdDev\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405

283. LabelPStdDev\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

284. LabelPStdDev\_credit\_card\_balance\_train\_csv\_AMT\_DRAWINGS\_ATM\_CURRENT\_

285. LabelPStdDev\_installments\_payments\_train\_csv\_AMT\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_15929\_28

286. LabelPStdDev\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_AMT\_INSTALMENT\_in\_\_8783\_3025\_\_16549\_6725\_

287. LabelPStdDev\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_\_where\_AMT\_PAYMENT\_in\_\_8088\_8175\_\_15929\_28\_

288. LabelPStdDev\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_NUMBER\_\_where\_NUM\_INSTALMENT\_NUMBER\_\_\_8\_5

289. LabelPStdDev\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_VERSION\_\_where\_NUM\_INSTALMENT\_VERSION\_\_\_1\_5

290. LabelPStdDev\_previous\_application\_train\_csv\_RATE\_DOWN\_PAYMENT\_

291. LabelPSum\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_CNT\_INSTALMENT\_\_\_24\_5

292. LabelPSum\_POS\_CASH\_balance\_train\_csv\_SK\_ID\_PREV\_\_where\_SK\_DPD\_\_\_\_0\_5

293. LabelPSum\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

294. LabelPSum\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

295. LabelPSum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_DEBT\_\_where\_CREDIT\_TYPE\_\_\_\_Consumer\_credit

296. LabelPSum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405

297. LabelPSum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

298. LabelPSum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_OVERDUE\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed

299. LabelPSum\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405

300. LabelPSum\_bureau\_train\_csv\_DAYS\_ENDDATE\_FACT\_\_where\_CNT\_CREDIT\_PROLONG\_\_\_\_0\_5

301. LabelPSum\_bureau\_train\_csv\_SK\_ID\_BUREAU\_\_where\_CREDIT\_TYPE\_\_\_\_Consumer\_credit

302. LabelPSum\_bureau\_train\_csv\_SK\_ID\_BUREAU\_\_where\_DAYS\_CREDIT\_\_\_\_\_983\_5

303. LabelPSum\_bureau\_train\_csv\_SK\_ID\_BUREAU\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

304. LabelPSum\_credit\_card\_balance\_train\_csv\_CNT\_DRAWINGS\_ATM\_CURRENT\_\_where\_AMT\_INST\_MIN\_REGULARITY\_\_\_0\_0225

305. LabelPSum\_installments\_payments\_train\_csv\_AMT\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_15929\_28

306. LabelPSum\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_\_where\_DAYS\_INSTALMENT\_in\_\_\_1654\_5\_\_\_821\_5\_

307. LabelPSum\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45

308. LabelPSum\_installments\_payments\_train\_csv\_SK\_ID\_PREV\_\_where\_AMT\_INSTALMENT\_\_\_16549\_6725

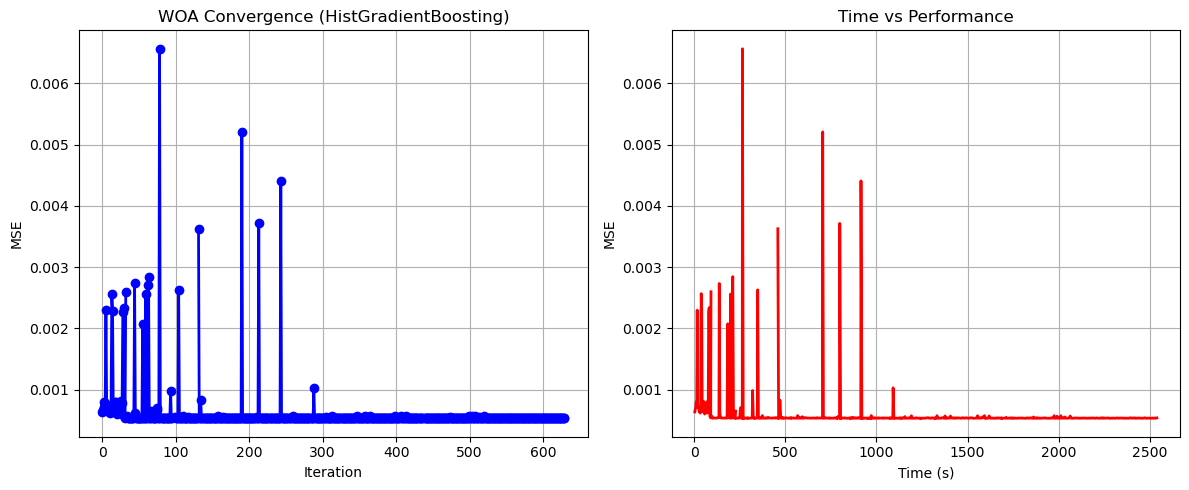
309. LabelPYEARS\_BEGINEXPLUATATION\_AVG

▶ Convergence progress:

- Initial MSE: 0.0006

- Final MSE: 0.0005

- Improvement: 15.4%



Whale Optimization completed successfully with MSE: 0.0005

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Running Squid Game Optimizer with HistGradientBoosting...

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=== SQUID GAME OPTIMIZER (SGO) ===

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[Initialization]

- Players: 30 (15 offensive, 15 defensive)

- Max games: 20

- Search space: 334 features

- Target: Minimize MSE using HistGradientBoosting

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=== OPTIMIZATION RESULTS ===

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▶ Best MSE achieved: 0.000583

▶ Time elapsed: 1717.55 seconds

▶ Features selected: 176/334 (47.3% reduction)

▶ Selected features:

1. AMT\_ANNUITY

2. AMT\_GOODS\_PRICE

3. CODE\_GENDER

4. DAYS\_BIRTH

5. DEF\_30\_CNT\_SOCIAL\_CIRCLE

6. DEF\_60\_CNT\_SOCIAL\_CIRCLE

7. EXT\_SOURCE\_1

8. EXT\_SOURCE\_2

9. EXT\_SOURCE\_3

10. FLAG\_DOCUMENT\_3

11. FLOORSMAX\_MEDI

12. FLOORSMAX\_MODE

13. FLOORSMIN\_MEDI

14. LIVINGAPARTMENTS\_MEDI

15. LIVINGAREA\_AVG

16. NAME\_EDUCATION\_TYPE

17. NAME\_INCOME\_TYPE

18. OCCUPATION\_TYPE

19. ORGANIZATION\_TYPE

20. OWN\_CAR\_AGE

21. REGION\_RATING\_CLIENT

22. REGION\_RATING\_CLIENT\_W\_CITY

23. REG\_CITY\_NOT\_LIVE\_CITY

24. SK\_ID\_CURR

25. Count\_POS\_CASH\_balance\_train\_csv\_\_where\_CNT\_INSTALMENT\_FUTURE\_in\_\_3\_5\_\_7\_5\_

26. Count\_bureau\_train\_csv\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

27. CountDistinct\_bureau\_balance\_preprocessed\_train\_csv\_STATUS\_\_where\_STATUS\_not\_in\_\_C\_\_0\_\_X\_

28. CountDistinct\_bureau\_train\_csv\_CREDIT\_ACTIVE\_\_where\_DAYS\_ENDDATE\_FACT\_\_\_\_\_1678\_5

29. CountDistinct\_credit\_card\_balance\_train\_csv\_NAME\_CONTRACT\_STATUS\_\_where\_AMT\_RECIVABLE\_\_\_0\_0225

30. CountDistinct\_previous\_application\_train\_csv\_NAME\_CONTRACT\_STATUS\_

31. Max\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_CNT\_INSTALMENT\_FUTURE\_\_\_\_7\_5

32. Max\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_SK\_DPD\_\_\_0\_5

33. Max\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

34. Max\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

35. Max\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

36. Max\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_DAYS\_CREDIT\_\_\_\_983\_5

37. Max\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

38. Max\_credit\_card\_balance\_train\_csv\_CNT\_DRAWINGS\_CURRENT\_

39. Max\_installments\_payments\_train\_csv\_AMT\_INSTALMENT\_

40. Max\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_NUM\_INSTALMENT\_VERSION\_in\_\_0\_5\_\_1\_5\_

41. Max\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_SK\_ID\_PREV\_\_\_\_1897795\_5

42. Max\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_369\_5

43. Max\_previous\_application\_train\_csv\_AMT\_DOWN\_PAYMENT\_

44. Max\_previous\_application\_train\_csv\_CNT\_PAYMENT\_

45. Mean\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

46. Mean\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_MONTHS\_BALANCE\_\_\_\_27\_5

47. Mean\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_DEF\_\_where\_NAME\_CONTRACT\_STATUS\_\_\_Active

48. Mean\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_\_where\_AMT\_CREDIT\_SUM\_\_\_\_124731\_405

49. Mean\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_\_0\_0675

50. Mean\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_OVERDUE\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed

51. Mean\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_CREDIT\_CURRENCY\_\_\_currency\_1

52. Mean\_credit\_card\_balance\_train\_csv\_AMT\_CREDIT\_LIMIT\_ACTUAL\_\_where\_AMT\_BALANCE\_\_\_\_0\_0225

53. Mean\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_AMT\_INSTALMENT\_\_\_8783\_3025

54. Mean\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45

55. Mean\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_369\_5

56. Mean\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_NUMBER\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45

57. Mean\_previous\_application\_train\_csv\_DAYS\_FIRST\_DRAWING\_

58. Median\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

59. Median\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

60. Median\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_MONTHS\_BALANCE\_\_\_\_27\_5

61. Median\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_CNT\_CREDIT\_PROLONG\_\_\_\_0\_5

62. Median\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_CREDIT\_\_\_\_983\_5

63. Median\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_\_where\_AMT\_CREDIT\_SUM\_OVERDUE\_\_\_0\_0225

64. Median\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_CNT\_CREDIT\_PROLONG\_\_\_\_0\_5

65. Median\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

66. Median\_credit\_card\_balance\_train\_csv\_AMT\_RECIVABLE\_\_where\_SK\_DPD\_DEF\_\_\_\_0\_5

67. Median\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_NUM\_INSTALMENT\_VERSION\_in\_\_0\_5\_\_1\_5\_

68. Median\_previous\_application\_train\_csv\_RATE\_DOWN\_PAYMENT\_

69. Min\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_

70. Min\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_LIMIT\_\_\_0\_0225

71. Min\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

72. Min\_bureau\_train\_csv\_DAYS\_CREDIT\_UPDATE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

73. Mode\_bureau\_balance\_preprocessed\_train\_csv\_STATUS\_\_where\_STATUS\_not\_in\_\_C\_\_0\_\_X\_

74. Mode\_bureau\_train\_csv\_CREDIT\_ACTIVE\_\_where\_CREDIT\_CURRENCY\_\_\_currency\_1

75. Mode\_bureau\_train\_csv\_CREDIT\_TYPE\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

76. Mode\_previous\_application\_train\_csv\_NAME\_CONTRACT\_STATUS\_

77. Mode\_previous\_application\_train\_csv\_NAME\_SELLER\_INDUSTRY\_

78. StdDev\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_CNT\_INSTALMENT\_FUTURE\_in\_\_3\_5\_\_7\_5\_

79. StdDev\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_MONTHS\_BALANCE\_\_\_\_\_27\_5

80. StdDev\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405

81. StdDev\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_DEBT\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

82. StdDev\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405

83. StdDev\_credit\_card\_balance\_train\_csv\_AMT\_DRAWINGS\_ATM\_CURRENT\_

84. StdDev\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_AMT\_INSTALMENT\_in\_\_8783\_3025\_\_16549\_6725\_

85. StdDev\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_\_where\_AMT\_PAYMENT\_in\_\_8088\_8175\_\_15929\_28\_

86. StdDev\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_AMT\_PAYMENT\_in\_\_8088\_8175\_\_15929\_28\_

87. StdDev\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_NUMBER\_\_where\_NUM\_INSTALMENT\_NUMBER\_\_\_8\_5

88. StdDev\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_VERSION\_\_where\_NUM\_INSTALMENT\_VERSION\_\_\_1\_5

89. Sum\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

90. Sum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405

91. Sum\_bureau\_train\_csv\_DAYS\_ENDDATE\_FACT\_\_where\_CNT\_CREDIT\_PROLONG\_\_\_\_0\_5

92. Sum\_bureau\_train\_csv\_SK\_ID\_BUREAU\_\_where\_CREDIT\_TYPE\_\_\_\_Consumer\_credit

93. Sum\_bureau\_train\_csv\_SK\_ID\_BUREAU\_\_where\_DAYS\_CREDIT\_\_\_\_\_983\_5

94. Sum\_bureau\_train\_csv\_SK\_ID\_BUREAU\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

95. Sum\_installments\_payments\_train\_csv\_AMT\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_15929\_28

96. Sum\_installments\_payments\_train\_csv\_SK\_ID\_PREV\_\_where\_AMT\_INSTALMENT\_\_\_16549\_6725

97. LabelPAMT\_ANNUITY

98. LabelPAMT\_CREDIT

99. LabelPAMT\_GOODS\_PRICE

100. LabelPCODE\_GENDER

101. LabelPCount\_POS\_CASH\_balance\_train\_csv\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

102. LabelPCount\_bureau\_train\_csv\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

103. LabelPCount\_bureau\_train\_csv\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed

104. LabelPCount\_bureau\_train\_csv\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

105. LabelPCountDistinct\_bureau\_balance\_preprocessed\_train\_csv\_STATUS\_\_where\_STATUS\_not\_in\_\_C\_\_0\_\_X\_

106. LabelPCountDistinct\_bureau\_train\_csv\_CREDIT\_ACTIVE\_\_where\_DAYS\_ENDDATE\_FACT\_\_\_\_\_1678\_5

107. LabelPCountDistinct\_previous\_application\_train\_csv\_CODE\_REJECT\_REASON\_

108. LabelPDAYS\_EMPLOYED

109. LabelPDAYS\_ID\_PUBLISH

110. LabelPEXT\_SOURCE\_1

111. LabelPEXT\_SOURCE\_2

112. LabelPFLAG\_DOCUMENT\_3

113. LabelPFLAG\_EMP\_PHONE

114. LabelPFLOORSMAX\_MEDI

115. LabelPFLOORSMIN\_MEDI

116. LabelPLIVINGAPARTMENTS\_MEDI

117. LabelPMax\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

118. LabelPMax\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

119. LabelPMax\_bureau\_train\_csv\_DAYS\_CREDIT\_UPDATE\_\_where\_CREDIT\_DAY\_OVERDUE\_\_\_0\_5

120. LabelPMax\_bureau\_train\_csv\_SK\_ID\_BUREAU\_\_where\_AMT\_CREDIT\_SUM\_OVERDUE\_\_\_\_0\_0225

121. LabelPMax\_credit\_card\_balance\_train\_csv\_CNT\_DRAWINGS\_CURRENT\_

122. LabelPMax\_installments\_payments\_train\_csv\_AMT\_INSTALMENT\_

123. LabelPMax\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_SK\_ID\_PREV\_\_\_\_1897795\_5

124. LabelPMax\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_

125. LabelPMax\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_\_830\_5

126. LabelPMax\_previous\_application\_train\_csv\_AMT\_DOWN\_PAYMENT\_

127. LabelPMean\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_SK\_ID\_PREV\_\_\_1897266

128. LabelPMean\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

129. LabelPMean\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_MONTHS\_BALANCE\_\_\_\_27\_5

130. LabelPMean\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_CREDIT\_DAY\_OVERDUE\_\_\_\_0\_5

131. LabelPMean\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_DEBT\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405

132. LabelPMean\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_CREDIT\_CURRENCY\_\_\_currency\_1

133. LabelPMean\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_DAYS\_CREDIT\_\_\_\_983\_5

134. LabelPMean\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_NUM\_INSTALMENT\_VERSION\_\_\_\_1\_5

135. LabelPMean\_previous\_application\_train\_csv\_DAYS\_FIRST\_DRAWING\_

136. LabelPMedian\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_CNT\_CREDIT\_PROLONG\_\_\_\_0\_5

137. LabelPMedian\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

138. LabelPMedian\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_\_where\_AMT\_CREDIT\_SUM\_OVERDUE\_\_\_0\_0225

139. LabelPMedian\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

140. LabelPMedian\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_CNT\_CREDIT\_PROLONG\_\_\_\_0\_5

141. LabelPMedian\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

142. LabelPMedian\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_NUM\_INSTALMENT\_VERSION\_in\_\_0\_5\_\_1\_5\_

143. LabelPMedian\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_\_1663\_5

144. LabelPMedian\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_NUMBER\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45

145. LabelPMedian\_previous\_application\_train\_csv\_AMT\_DOWN\_PAYMENT\_

146. LabelPMin\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_

147. LabelPMin\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_AMT\_INSTALMENT\_\_\_8783\_3025

148. LabelPMin\_previous\_application\_train\_csv\_HOUR\_APPR\_PROCESS\_START\_

149. LabelPMin\_previous\_application\_train\_csv\_RATE\_DOWN\_PAYMENT\_

150. LabelPMode\_bureau\_balance\_preprocessed\_train\_csv\_STATUS\_\_where\_STATUS\_not\_in\_\_C\_\_0\_\_X\_

151. LabelPMode\_bureau\_train\_csv\_CREDIT\_ACTIVE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

152. LabelPMode\_previous\_application\_train\_csv\_NAME\_CONTRACT\_STATUS\_

153. LabelPMode\_previous\_application\_train\_csv\_NAME\_SELLER\_INDUSTRY\_

154. LabelPNAME\_CONTRACT\_TYPE

155. LabelPREGION\_RATING\_CLIENT

156. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_MONTHS\_BALANCE\_\_\_\_27\_5

157. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_CNT\_INSTALMENT\_\_\_\_12\_5

158. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_SK\_ID\_PREV\_\_where\_CNT\_INSTALMENT\_FUTURE\_in\_\_3\_5\_\_7\_5\_

159. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_SK\_ID\_PREV\_\_where\_CNT\_INSTALMENT\_FUTURE\_in\_\_7\_5\_\_13\_5\_

160. LabelPStdDev\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405

161. LabelPStdDev\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_ENDDATE\_FACT\_\_\_\_\_1678\_5

162. LabelPStdDev\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405

163. LabelPStdDev\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

164. LabelPStdDev\_credit\_card\_balance\_train\_csv\_AMT\_DRAWINGS\_ATM\_CURRENT\_

165. LabelPStdDev\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_\_where\_AMT\_PAYMENT\_in\_\_8088\_8175\_\_15929\_28\_

166. LabelPStdDev\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_NUMBER\_\_where\_NUM\_INSTALMENT\_NUMBER\_\_\_8\_5

167. LabelPStdDev\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_VERSION\_\_where\_NUM\_INSTALMENT\_VERSION\_\_\_1\_5

168. LabelPSum\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_CNT\_INSTALMENT\_\_\_24\_5

169. LabelPSum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_DEBT\_\_where\_CREDIT\_TYPE\_\_\_\_Consumer\_credit

170. LabelPSum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405

171. LabelPSum\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405

172. LabelPSum\_bureau\_train\_csv\_SK\_ID\_BUREAU\_\_where\_CREDIT\_TYPE\_\_\_\_Consumer\_credit

173. LabelPSum\_bureau\_train\_csv\_SK\_ID\_BUREAU\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

174. LabelPSum\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_\_where\_DAYS\_INSTALMENT\_in\_\_\_1654\_5\_\_\_821\_5\_

175. LabelPSum\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_NUMBER\_\_where\_AMT\_PAYMENT\_\_\_8088\_8175

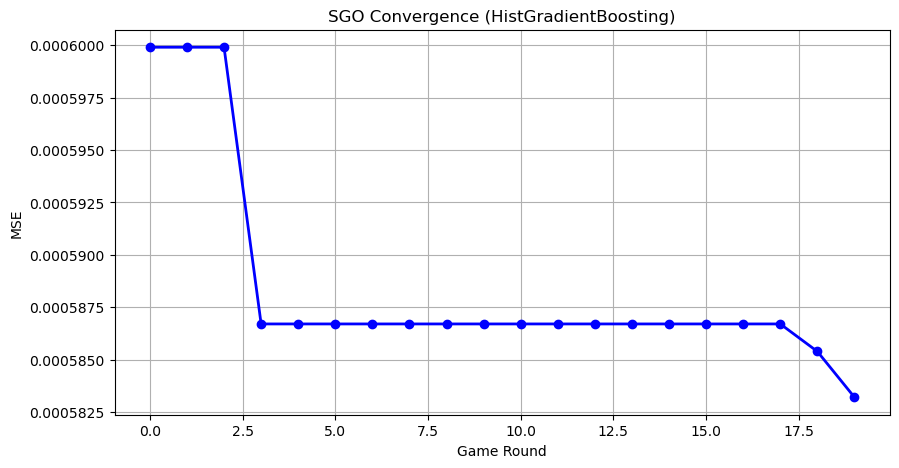
176. LabelPSum\_installments\_payments\_train\_csv\_SK\_ID\_PREV\_\_where\_AMT\_INSTALMENT\_\_\_16549\_6725

▶ Convergence progress:

- Initial MSE: 0.0006

- Final MSE: 0.0006

- Improvement: 2.8%



Squid Game Optimizer completed successfully with MSE: 0.0006

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Running PSH-Hyptrite with HistGradientBoosting...

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=== PSH-HYPTRITE OPTIMIZATION ===

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[Initialization]

- Search points: 30

- Max iterations: 20

- Initial radius: 0.5 (adaptive)

- Hypersphere samples: 3 per point

- Search space: 334 features

- Target: Minimize MSE using HistGradientBoosting

[Optimization Progress]

Iter 20/20 | Best MSE: 0.000568 | Radius: 0.0250

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=== OPTIMIZATION RESULTS ===

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▶ Best MSE achieved: 0.000568

▶ Time elapsed: 4956.95 seconds

▶ Features selected: 168/334 (49.7% reduction)

▶ Selected features (with weights):

1. AMT\_ANNUITY (weight: 0.563)

2. AMT\_GOODS\_PRICE (weight: 0.770)

3. CODE\_GENDER (weight: 0.534)

4. DAYS\_BIRTH (weight: 0.751)

5. DAYS\_EMPLOYED (weight: 0.760)

6. DEF\_60\_CNT\_SOCIAL\_CIRCLE (weight: 0.525)

7. EXT\_SOURCE\_1 (weight: 0.603)

8. EXT\_SOURCE\_2 (weight: 0.629)

9. EXT\_SOURCE\_3 (weight: 0.760)

10. FLAG\_DOCUMENT\_3 (weight: 0.506)

11. FLOORSMAX\_MEDI (weight: 0.867)

12. FLOORSMAX\_MODE (weight: 0.726)

13. NAME\_FAMILY\_STATUS (weight: 0.944)

14. ORGANIZATION\_TYPE (weight: 0.513)

15. OWN\_CAR\_AGE (weight: 0.569)

16. REGION\_POPULATION\_RELATIVE (weight: 0.829)

17. REGION\_RATING\_CLIENT\_W\_CITY (weight: 0.524)

18. REG\_CITY\_NOT\_LIVE\_CITY (weight: 0.972)

19. SK\_ID\_CURR (weight: 0.661)

20. Count\_POS\_CASH\_balance\_train\_csv\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5 (weight: 0.596)

21. Count\_bureau\_train\_csv\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675 (weight: 0.885)

22. Count\_bureau\_train\_csv\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed (weight: 0.917)

23. CountDistinct\_bureau\_train\_csv\_CREDIT\_ACTIVE\_\_where\_DAYS\_ENDDATE\_FACT\_\_\_\_\_1678\_5 (weight: 0.767)

24. CountDistinct\_credit\_card\_balance\_train\_csv\_NAME\_CONTRACT\_STATUS\_\_where\_AMT\_RECIVABLE\_\_\_0\_0225 (weight: 0.971)

25. Max\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5 (weight: 0.715)

26. Max\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5 (weight: 0.870)

27. Max\_bureau\_train\_csv\_CREDIT\_DAY\_OVERDUE\_\_where\_AMT\_CREDIT\_SUM\_OVERDUE\_\_\_0\_0225 (weight: 0.821)

28. Max\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675 (weight: 0.550)

29. Max\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5 (weight: 0.777)

30. Max\_bureau\_train\_csv\_DAYS\_CREDIT\_UPDATE\_\_where\_CREDIT\_DAY\_OVERDUE\_\_\_0\_5 (weight: 0.669)

31. Max\_bureau\_train\_csv\_SK\_ID\_BUREAU\_\_where\_AMT\_CREDIT\_SUM\_OVERDUE\_\_\_\_0\_0225 (weight: 0.520)

32. Max\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_369\_5 (weight: 0.700)

33. Max\_previous\_application\_train\_csv\_AMT\_DOWN\_PAYMENT\_ (weight: 0.538)

34. Mean\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_CNT\_INSTALMENT\_\_\_24\_5 (weight: 0.990)

35. Mean\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_SK\_ID\_PREV\_\_\_\_1897266 (weight: 0.651)

36. Mean\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_DEBT\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405 (weight: 0.516)

37. Mean\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_\_0\_0675 (weight: 0.591)

38. Mean\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_CREDIT\_CURRENCY\_\_\_currency\_1 (weight: 0.992)

39. Median\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5 (weight: 0.670)

40. Median\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5 (weight: 0.958)

41. Median\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_MONTHS\_BALANCE\_\_\_\_27\_5 (weight: 0.662)

42. Median\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_CNT\_CREDIT\_PROLONG\_\_\_\_0\_5 (weight: 0.537)

43. Median\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5 (weight: 0.526)

44. Median\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_\_where\_AMT\_CREDIT\_SUM\_OVERDUE\_\_\_0\_0225 (weight: 0.568)

45. Median\_bureau\_train\_csv\_DAYS\_CREDIT\_ (weight: 0.964)

46. Median\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675 (weight: 0.759)

47. Median\_credit\_card\_balance\_train\_csv\_AMT\_RECIVABLE\_\_where\_SK\_DPD\_DEF\_\_\_\_0\_5 (weight: 0.528)

48. Median\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_NUM\_INSTALMENT\_VERSION\_in\_\_0\_5\_\_1\_5\_ (weight: 0.531)

49. Median\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_NUMBER\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45 (weight: 0.809)

50. Median\_previous\_application\_train\_csv\_RATE\_DOWN\_PAYMENT\_ (weight: 0.898)

51. Min\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675 (weight: 0.670)

52. Min\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_LIMIT\_\_\_0\_0225 (weight: 0.763)

53. Min\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed (weight: 0.617)

54. Min\_bureau\_train\_csv\_DAYS\_CREDIT\_UPDATE\_\_where\_CREDIT\_TYPE\_\_\_Consumer\_credit (weight: 0.676)

55. Min\_credit\_card\_balance\_train\_csv\_AMT\_DRAWINGS\_OTHER\_CURRENT\_ (weight: 0.715)

56. Min\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_\_830\_5 (weight: 0.604)

57. Mode\_bureau\_balance\_preprocessed\_train\_csv\_STATUS\_\_where\_STATUS\_not\_in\_\_C\_\_0\_\_X\_ (weight: 0.736)

58. Mode\_bureau\_train\_csv\_CREDIT\_ACTIVE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5 (weight: 0.859)

59. Mode\_previous\_application\_train\_csv\_NAME\_CONTRACT\_STATUS\_ (weight: 0.628)

60. Mode\_previous\_application\_train\_csv\_NAME\_SELLER\_INDUSTRY\_ (weight: 0.577)

61. StdDev\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_MONTHS\_BALANCE\_\_\_\_27\_5 (weight: 0.706)

62. StdDev\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_DEF\_ (weight: 0.698)

63. StdDev\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_DEF\_\_where\_CNT\_INSTALMENT\_\_\_24\_5 (weight: 0.883)

64. StdDev\_POS\_CASH\_balance\_train\_csv\_SK\_ID\_PREV\_\_where\_CNT\_INSTALMENT\_FUTURE\_in\_\_3\_5\_\_7\_5\_ (weight: 0.877)

65. StdDev\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405 (weight: 0.983)

66. StdDev\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_ENDDATE\_FACT\_\_\_\_\_1678\_5 (weight: 0.956)

67. StdDev\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_DEBT\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5 (weight: 0.598)

68. StdDev\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675 (weight: 0.872)

69. StdDev\_credit\_card\_balance\_train\_csv\_AMT\_DRAWINGS\_ATM\_CURRENT\_ (weight: 0.707)

70. StdDev\_installments\_payments\_train\_csv\_AMT\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_15929\_28 (weight: 0.736)

71. StdDev\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_AMT\_INSTALMENT\_in\_\_8783\_3025\_\_16549\_6725\_ (weight: 0.779)

72. StdDev\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_VERSION\_\_where\_NUM\_INSTALMENT\_VERSION\_\_\_1\_5 (weight: 0.527)

73. Sum\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_CNT\_INSTALMENT\_\_\_24\_5 (weight: 0.951)

74. Sum\_POS\_CASH\_balance\_train\_csv\_SK\_ID\_PREV\_\_where\_SK\_DPD\_\_\_\_0\_5 (weight: 0.569)

75. Sum\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675 (weight: 0.746)

76. Sum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_DEBT\_\_where\_CREDIT\_TYPE\_\_\_\_Consumer\_credit (weight: 0.733)

77. Sum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405 (weight: 0.639)

78. Sum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_OVERDUE\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed (weight: 0.754)

79. Sum\_bureau\_train\_csv\_DAYS\_ENDDATE\_FACT\_\_where\_CNT\_CREDIT\_PROLONG\_\_\_\_0\_5 (weight: 0.584)

80. Sum\_bureau\_train\_csv\_SK\_ID\_BUREAU\_\_where\_DAYS\_CREDIT\_\_\_\_\_983\_5 (weight: 0.587)

81. Sum\_credit\_card\_balance\_train\_csv\_CNT\_DRAWINGS\_ATM\_CURRENT\_\_where\_AMT\_INST\_MIN\_REGULARITY\_\_\_0\_0225 (weight: 0.938)

82. Sum\_installments\_payments\_train\_csv\_AMT\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_15929\_28 (weight: 0.832)

83. Sum\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_\_where\_DAYS\_INSTALMENT\_in\_\_\_1654\_5\_\_\_821\_5\_ (weight: 0.980)

84. Sum\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45 (weight: 0.869)

85. Sum\_installments\_payments\_train\_csv\_SK\_ID\_PREV\_\_where\_AMT\_INSTALMENT\_\_\_16549\_6725 (weight: 0.618)

86. LabelPAMT\_ANNUITY (weight: 0.523)

87. LabelPAMT\_CREDIT (weight: 0.834)

88. LabelPAMT\_GOODS\_PRICE (weight: 0.971)

89. LabelPCount\_POS\_CASH\_balance\_train\_csv\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5 (weight: 0.764)

90. LabelPCount\_bureau\_train\_csv\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5 (weight: 0.821)

91. LabelPCountDistinct\_bureau\_balance\_preprocessed\_train\_csv\_STATUS\_\_where\_STATUS\_not\_in\_\_C\_\_0\_\_X\_ (weight: 0.639)

92. LabelPCountDistinct\_credit\_card\_balance\_train\_csv\_NAME\_CONTRACT\_STATUS\_\_where\_AMT\_RECIVABLE\_\_\_0\_0225 (weight: 0.952)

93. LabelPCountDistinct\_previous\_application\_train\_csv\_CODE\_REJECT\_REASON\_ (weight: 0.958)

94. LabelPDEF\_30\_CNT\_SOCIAL\_CIRCLE (weight: 0.627)

95. LabelPEXT\_SOURCE\_2 (weight: 0.617)

96. LabelPFLAG\_DOCUMENT\_3 (weight: 0.623)

97. LabelPFLAG\_OWN\_CAR (weight: 1.000)

98. LabelPFLOORSMAX\_MEDI (weight: 0.934)

99. LabelPFLOORSMAX\_MODE (weight: 0.595)

100. LabelPFLOORSMIN\_MEDI (weight: 0.773)

101. LabelPLIVINGAPARTMENTS\_MEDI (weight: 0.535)

102. LabelPMax\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5 (weight: 0.865)

103. LabelPMax\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5 (weight: 0.778)

104. LabelPMax\_bureau\_train\_csv\_CREDIT\_DAY\_OVERDUE\_\_where\_AMT\_CREDIT\_SUM\_OVERDUE\_\_\_0\_0225 (weight: 0.996)

105. LabelPMax\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675 (weight: 0.645)

106. LabelPMax\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5 (weight: 0.964)

107. LabelPMax\_bureau\_train\_csv\_DAYS\_CREDIT\_UPDATE\_\_where\_CREDIT\_DAY\_OVERDUE\_\_\_0\_5 (weight: 0.593)

108. LabelPMax\_credit\_card\_balance\_train\_csv\_CNT\_DRAWINGS\_CURRENT\_ (weight: 0.764)

109. LabelPMax\_installments\_payments\_train\_csv\_AMT\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_\_8088\_8175 (weight: 0.705)

110. LabelPMax\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_ (weight: 0.590)

111. LabelPMax\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_369\_5 (weight: 0.853)

112. LabelPMax\_previous\_application\_train\_csv\_AMT\_DOWN\_PAYMENT\_ (weight: 0.841)

113. LabelPMax\_previous\_application\_train\_csv\_CNT\_PAYMENT\_ (weight: 0.878)

114. LabelPMean\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_CNT\_INSTALMENT\_\_\_24\_5 (weight: 0.515)

115. LabelPMean\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_SK\_ID\_PREV\_\_\_\_1897266 (weight: 0.979)

116. LabelPMean\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_DEF\_\_where\_NAME\_CONTRACT\_STATUS\_\_\_Active (weight: 0.747)

117. LabelPMean\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5 (weight: 0.554)

118. LabelPMean\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_\_where\_AMT\_CREDIT\_SUM\_\_\_\_124731\_405 (weight: 0.797)

119. LabelPMean\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_OVERDUE\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed (weight: 0.741)

120. LabelPMean\_credit\_card\_balance\_train\_csv\_AMT\_CREDIT\_LIMIT\_ACTUAL\_\_where\_AMT\_BALANCE\_\_\_\_0\_0225 (weight: 0.592)

121. LabelPMean\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_AMT\_INSTALMENT\_\_\_8783\_3025 (weight: 0.912)

122. LabelPMean\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_NUM\_INSTALMENT\_VERSION\_\_\_\_1\_5 (weight: 0.737)

123. LabelPMean\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45 (weight: 0.714)

124. LabelPMean\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_369\_5 (weight: 0.606)

125. LabelPMedian\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5 (weight: 0.973)

126. LabelPMedian\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5 (weight: 0.664)

127. LabelPMedian\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_\_where\_AMT\_CREDIT\_SUM\_OVERDUE\_\_\_0\_0225 (weight: 0.649)

128. LabelPMedian\_bureau\_train\_csv\_DAYS\_CREDIT\_ (weight: 0.877)

129. LabelPMedian\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_CNT\_CREDIT\_PROLONG\_\_\_\_0\_5 (weight: 0.571)

130. LabelPMedian\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5 (weight: 0.611)

131. LabelPMedian\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_NUMBER\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45 (weight: 0.847)

132. LabelPMedian\_previous\_application\_train\_csv\_AMT\_DOWN\_PAYMENT\_ (weight: 0.583)

133. LabelPMin\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_ (weight: 0.740)

134. LabelPMin\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed (weight: 0.936)

135. LabelPMin\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed (weight: 0.549)

136. LabelPMin\_credit\_card\_balance\_train\_csv\_AMT\_DRAWINGS\_OTHER\_CURRENT\_ (weight: 0.897)

137. LabelPMin\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_\_830\_5 (weight: 0.904)

138. LabelPMin\_previous\_application\_train\_csv\_RATE\_DOWN\_PAYMENT\_ (weight: 0.797)

139. LabelPMode\_bureau\_train\_csv\_CREDIT\_ACTIVE\_\_where\_CREDIT\_CURRENCY\_\_\_currency\_1 (weight: 0.742)

140. LabelPMode\_bureau\_train\_csv\_CREDIT\_ACTIVE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5 (weight: 0.533)

141. LabelPMode\_previous\_application\_train\_csv\_CODE\_REJECT\_REASON\_ (weight: 0.510)

142. LabelPNAME\_CONTRACT\_TYPE (weight: 0.750)

143. LabelPNAME\_EDUCATION\_TYPE (weight: 0.886)

144. LabelPNAME\_FAMILY\_STATUS (weight: 0.571)

145. LabelPOCCUPATION\_TYPE (weight: 0.981)

146. LabelPREGION\_POPULATION\_RELATIVE (weight: 0.733)

147. LabelPREGION\_RATING\_CLIENT\_W\_CITY (weight: 0.781)

148. LabelPREG\_CITY\_NOT\_WORK\_CITY (weight: 0.647)

149. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_MONTHS\_BALANCE\_\_\_\_27\_5 (weight: 0.505)

150. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_MONTHS\_BALANCE\_\_\_\_\_27\_5 (weight: 0.806)

151. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_SK\_ID\_PREV\_\_where\_CNT\_INSTALMENT\_FUTURE\_in\_\_3\_5\_\_7\_5\_ (weight: 0.660)

152. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_SK\_ID\_PREV\_\_where\_CNT\_INSTALMENT\_FUTURE\_in\_\_7\_5\_\_13\_5\_ (weight: 0.657)

153. LabelPStdDev\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405 (weight: 0.944)

154. LabelPStdDev\_credit\_card\_balance\_train\_csv\_AMT\_DRAWINGS\_ATM\_CURRENT\_ (weight: 0.679)

155. LabelPStdDev\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_AMT\_INSTALMENT\_in\_\_8783\_3025\_\_16549\_6725\_ (weight: 0.559)

156. LabelPStdDev\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_\_where\_AMT\_PAYMENT\_in\_\_8088\_8175\_\_15929\_28\_ (weight: 0.774)

157. LabelPStdDev\_previous\_application\_train\_csv\_RATE\_DOWN\_PAYMENT\_ (weight: 0.957)

158. LabelPSum\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_CNT\_INSTALMENT\_\_\_24\_5 (weight: 0.991)

159. LabelPSum\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675 (weight: 0.802)

160. LabelPSum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5 (weight: 0.746)

161. LabelPSum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_OVERDUE\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed (weight: 0.516)

162. LabelPSum\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405 (weight: 0.655)

163. LabelPSum\_bureau\_train\_csv\_SK\_ID\_BUREAU\_\_where\_DAYS\_CREDIT\_\_\_\_\_983\_5 (weight: 0.930)

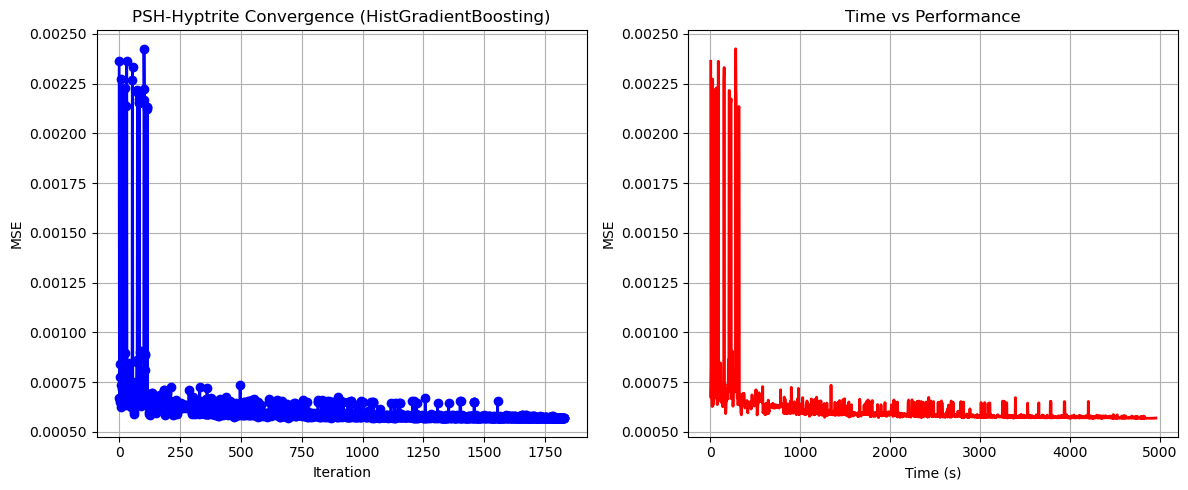
164. LabelPSum\_credit\_card\_balance\_train\_csv\_CNT\_DRAWINGS\_ATM\_CURRENT\_\_where\_AMT\_INST\_MIN\_REGULARITY\_\_\_0\_0225 (weight: 0.894)

165. LabelPSum\_installments\_payments\_train\_csv\_AMT\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_15929\_28 (weight: 0.867)

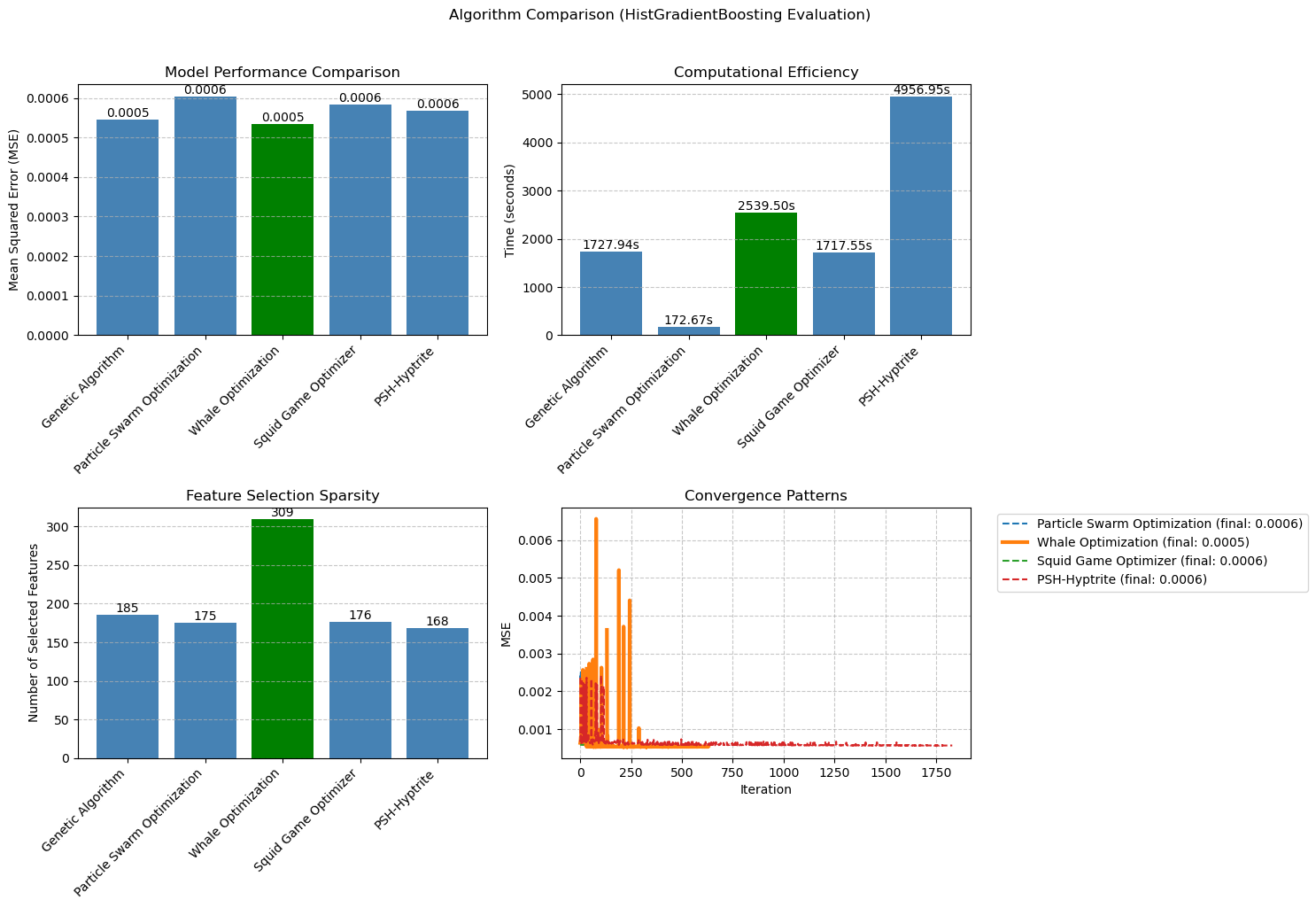
166. LabelPSum\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_\_where\_DAYS\_INSTALMENT\_in\_\_\_1654\_5\_\_\_821\_5\_ (weight: 0.849)

167. LabelPSum\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45 (weight: 0.572)

168. LabelPSum\_installments\_payments\_train\_csv\_SK\_ID\_PREV\_\_where\_AMT\_INSTALMENT\_\_\_16549\_6725 (weight: 0.909)



PSH-Hyptrite completed successfully with MSE: 0.0006



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=== FINAL FEATURE SELECTION RESULTS USING HistGradientBoosting ===

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🏆 BEST ALGORITHM: WHALE OPTIMIZATION

• MSE: 0.000534

• Time: 2539.50 seconds

• Features: 309/334 (7.5% reduction)

📊 COMPARISON TABLE:

Algorithm MSE Time (s) Features

---------------------------------------------------------------------------

Whale Optimization 0.000534 2539.50 309

Genetic Algorithm 0.000545 1727.94 185

PSH-Hyptrite 0.000568 4956.95 168

Squid Game Optimizer 0.000583 1717.55 176

Particle Swarm Optimization 0.000604 172.67 175

🔍 SELECTED FEATURES:

1. AMT\_ANNUITY

2. AMT\_CREDIT

3. AMT\_GOODS\_PRICE

4. CODE\_GENDER

5. DAYS\_BIRTH

6. DAYS\_ID\_PUBLISH

7. DEF\_30\_CNT\_SOCIAL\_CIRCLE

8. DEF\_60\_CNT\_SOCIAL\_CIRCLE

9. EXT\_SOURCE\_1

10. EXT\_SOURCE\_2

11. EXT\_SOURCE\_3

12. FLAG\_DOCUMENT\_3

13. FLAG\_EMP\_PHONE

14. FLAG\_OWN\_CAR

15. FLOORSMAX\_MEDI

16. FLOORSMAX\_MODE

17. FLOORSMIN\_MEDI

18. NAME\_CONTRACT\_TYPE

19. NAME\_EDUCATION\_TYPE

20. NAME\_INCOME\_TYPE

21. OCCUPATION\_TYPE

22. ORGANIZATION\_TYPE

23. OWN\_CAR\_AGE

24. REGION\_POPULATION\_RELATIVE

25. REGION\_RATING\_CLIENT

26. REGION\_RATING\_CLIENT\_W\_CITY

27. REG\_CITY\_NOT\_LIVE\_CITY

28. SK\_ID\_CURR

29. TARGET

30. YEARS\_BEGINEXPLUATATION\_AVG

31. Count\_POS\_CASH\_balance\_train\_csv\_\_where\_CNT\_INSTALMENT\_FUTURE\_in\_\_3\_5\_\_7\_5\_

32. Count\_POS\_CASH\_balance\_train\_csv\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

33. Count\_bureau\_train\_csv\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

34. Count\_bureau\_train\_csv\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed

35. Count\_bureau\_train\_csv\_\_where\_DAYS\_CREDIT\_\_\_\_983\_5

36. Count\_bureau\_train\_csv\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

37. CountDistinct\_bureau\_balance\_preprocessed\_train\_csv\_STATUS\_\_where\_STATUS\_not\_in\_\_C\_\_0\_\_X\_

38. CountDistinct\_bureau\_train\_csv\_CREDIT\_ACTIVE\_\_where\_DAYS\_ENDDATE\_FACT\_\_\_\_\_1678\_5

39. CountDistinct\_credit\_card\_balance\_train\_csv\_NAME\_CONTRACT\_STATUS\_\_where\_AMT\_RECIVABLE\_\_\_0\_0225

40. CountDistinct\_previous\_application\_train\_csv\_CODE\_REJECT\_REASON\_

41. Max\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_CNT\_INSTALMENT\_FUTURE\_\_\_\_7\_5

42. Max\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_SK\_DPD\_\_\_0\_5

43. Max\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

44. Max\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

45. Max\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

46. Max\_bureau\_train\_csv\_CREDIT\_DAY\_OVERDUE\_\_where\_AMT\_CREDIT\_SUM\_OVERDUE\_\_\_0\_0225

47. Max\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

48. Max\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_DAYS\_CREDIT\_\_\_\_983\_5

49. Max\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

50. Max\_bureau\_train\_csv\_DAYS\_CREDIT\_UPDATE\_\_where\_CREDIT\_DAY\_OVERDUE\_\_\_0\_5

51. Max\_bureau\_train\_csv\_SK\_ID\_BUREAU\_\_where\_AMT\_CREDIT\_SUM\_OVERDUE\_\_\_\_0\_0225

52. Max\_credit\_card\_balance\_train\_csv\_CNT\_DRAWINGS\_CURRENT\_

53. Max\_installments\_payments\_train\_csv\_AMT\_INSTALMENT\_

54. Max\_installments\_payments\_train\_csv\_AMT\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_\_8088\_8175

55. Max\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_AMT\_INSTALMENT\_in\_\_8783\_3025\_\_16549\_6725\_

56. Max\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_NUM\_INSTALMENT\_VERSION\_in\_\_0\_5\_\_1\_5\_

57. Max\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_SK\_ID\_PREV\_\_\_\_1897795\_5

58. Max\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_

59. Max\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_369\_5

60. Max\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_\_830\_5

61. Max\_previous\_application\_train\_csv\_AMT\_DOWN\_PAYMENT\_

62. Max\_previous\_application\_train\_csv\_CNT\_PAYMENT\_

63. Mean\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_CNT\_INSTALMENT\_\_\_24\_5

64. Mean\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_SK\_ID\_PREV\_\_\_\_1897266

65. Mean\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_SK\_ID\_PREV\_\_\_1897266

66. Mean\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

67. Mean\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_MONTHS\_BALANCE\_\_\_\_27\_5

68. Mean\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_DEF\_\_where\_NAME\_CONTRACT\_STATUS\_\_\_Active

69. Mean\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_AMT\_CREDIT\_SUM\_LIMIT\_\_\_\_0\_0225

70. Mean\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_CREDIT\_DAY\_OVERDUE\_\_\_\_0\_5

71. Mean\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_\_where\_AMT\_CREDIT\_SUM\_\_\_\_124731\_405

72. Mean\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_DEBT\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405

73. Mean\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_\_0\_0675

74. Mean\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_OVERDUE\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed

75. Mean\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_CREDIT\_CURRENCY\_\_\_currency\_1

76. Mean\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_DAYS\_CREDIT\_\_\_\_983\_5

77. Mean\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

78. Mean\_credit\_card\_balance\_train\_csv\_AMT\_CREDIT\_LIMIT\_ACTUAL\_\_where\_AMT\_BALANCE\_\_\_\_0\_0225

79. Mean\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_AMT\_INSTALMENT\_\_\_8783\_3025

80. Mean\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_NUM\_INSTALMENT\_VERSION\_\_\_\_1\_5

81. Mean\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45

82. Mean\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_NUMBER\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45

83. Mean\_previous\_application\_train\_csv\_DAYS\_FIRST\_DRAWING\_

84. Median\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

85. Median\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

86. Median\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_MONTHS\_BALANCE\_\_\_\_27\_5

87. Median\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_CNT\_CREDIT\_PROLONG\_\_\_\_0\_5

88. Median\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_CREDIT\_\_\_\_983\_5

89. Median\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

90. Median\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_\_where\_AMT\_CREDIT\_SUM\_OVERDUE\_\_\_0\_0225

91. Median\_bureau\_train\_csv\_DAYS\_CREDIT\_

92. Median\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

93. Median\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_CNT\_CREDIT\_PROLONG\_\_\_\_0\_5

94. Median\_credit\_card\_balance\_train\_csv\_AMT\_RECIVABLE\_\_where\_SK\_DPD\_DEF\_\_\_\_0\_5

95. Median\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_\_1663\_5

96. Median\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_NUMBER\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45

97. Median\_previous\_application\_train\_csv\_AMT\_DOWN\_PAYMENT\_

98. Median\_previous\_application\_train\_csv\_RATE\_DOWN\_PAYMENT\_

99. Min\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_

100. Min\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed

101. Min\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

102. Min\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_LIMIT\_\_\_0\_0225

103. Min\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

104. Min\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed

105. Min\_bureau\_train\_csv\_DAYS\_CREDIT\_UPDATE\_\_where\_CREDIT\_TYPE\_\_\_Consumer\_credit

106. Min\_bureau\_train\_csv\_DAYS\_CREDIT\_UPDATE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

107. Min\_credit\_card\_balance\_train\_csv\_AMT\_DRAWINGS\_OTHER\_CURRENT\_

108. Min\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_AMT\_INSTALMENT\_\_\_8783\_3025

109. Min\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_\_830\_5

110. Min\_previous\_application\_train\_csv\_HOUR\_APPR\_PROCESS\_START\_

111. Min\_previous\_application\_train\_csv\_RATE\_DOWN\_PAYMENT\_

112. Mode\_bureau\_balance\_preprocessed\_train\_csv\_STATUS\_\_where\_STATUS\_not\_in\_\_C\_\_0\_\_X\_

113. Mode\_bureau\_train\_csv\_CREDIT\_ACTIVE\_\_where\_CREDIT\_CURRENCY\_\_\_currency\_1

114. Mode\_bureau\_train\_csv\_CREDIT\_ACTIVE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

115. Mode\_bureau\_train\_csv\_CREDIT\_TYPE\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

116. Mode\_previous\_application\_train\_csv\_NAME\_CONTRACT\_STATUS\_

117. Mode\_previous\_application\_train\_csv\_NAME\_SELLER\_INDUSTRY\_

118. StdDev\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_MONTHS\_BALANCE\_\_\_\_27\_5

119. StdDev\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_CNT\_INSTALMENT\_FUTURE\_in\_\_3\_5\_\_7\_5\_

120. StdDev\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_MONTHS\_BALANCE\_\_\_\_\_27\_5

121. StdDev\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_CNT\_INSTALMENT\_\_\_\_12\_5

122. StdDev\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_DEF\_

123. StdDev\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_DEF\_\_where\_CNT\_INSTALMENT\_\_\_24\_5

124. StdDev\_POS\_CASH\_balance\_train\_csv\_SK\_ID\_PREV\_\_where\_CNT\_INSTALMENT\_FUTURE\_in\_\_7\_5\_\_13\_5\_

125. StdDev\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405

126. StdDev\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_ENDDATE\_FACT\_\_\_\_\_1678\_5

127. StdDev\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_DEBT\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

128. StdDev\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405

129. StdDev\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

130. StdDev\_credit\_card\_balance\_train\_csv\_AMT\_DRAWINGS\_ATM\_CURRENT\_

131. StdDev\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_AMT\_INSTALMENT\_in\_\_8783\_3025\_\_16549\_6725\_

132. StdDev\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_\_where\_AMT\_PAYMENT\_in\_\_8088\_8175\_\_15929\_28\_

133. StdDev\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_AMT\_PAYMENT\_in\_\_8088\_8175\_\_15929\_28\_

134. StdDev\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_NUMBER\_\_where\_NUM\_INSTALMENT\_NUMBER\_\_\_8\_5

135. StdDev\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_VERSION\_\_where\_NUM\_INSTALMENT\_VERSION\_\_\_1\_5

136. StdDev\_previous\_application\_train\_csv\_RATE\_DOWN\_PAYMENT\_

137. Sum\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_CNT\_INSTALMENT\_\_\_24\_5

138. Sum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_DEBT\_\_where\_CREDIT\_TYPE\_\_\_\_Consumer\_credit

139. Sum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405

140. Sum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

141. Sum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_OVERDUE\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed

142. Sum\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405

143. Sum\_bureau\_train\_csv\_DAYS\_ENDDATE\_FACT\_\_where\_CNT\_CREDIT\_PROLONG\_\_\_\_0\_5

144. Sum\_bureau\_train\_csv\_SK\_ID\_BUREAU\_\_where\_CREDIT\_TYPE\_\_\_\_Consumer\_credit

145. Sum\_bureau\_train\_csv\_SK\_ID\_BUREAU\_\_where\_DAYS\_CREDIT\_\_\_\_\_983\_5

146. Sum\_credit\_card\_balance\_train\_csv\_CNT\_DRAWINGS\_ATM\_CURRENT\_\_where\_AMT\_INST\_MIN\_REGULARITY\_\_\_0\_0225

147. Sum\_installments\_payments\_train\_csv\_AMT\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_15929\_28

148. Sum\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_\_where\_DAYS\_INSTALMENT\_in\_\_\_1654\_5\_\_\_821\_5\_

149. Sum\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45

150. Sum\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_NUMBER\_\_where\_AMT\_PAYMENT\_\_\_8088\_8175

151. Sum\_installments\_payments\_train\_csv\_SK\_ID\_PREV\_\_where\_AMT\_INSTALMENT\_\_\_16549\_6725

152. LabelPAMT\_ANNUITY

153. LabelPAMT\_CREDIT

154. LabelPAMT\_GOODS\_PRICE

155. LabelPCODE\_GENDER

156. LabelPCount\_POS\_CASH\_balance\_train\_csv\_\_where\_CNT\_INSTALMENT\_FUTURE\_in\_\_3\_5\_\_7\_5\_

157. LabelPCount\_POS\_CASH\_balance\_train\_csv\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

158. LabelPCount\_bureau\_train\_csv\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

159. LabelPCount\_bureau\_train\_csv\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed

160. LabelPCount\_bureau\_train\_csv\_\_where\_DAYS\_CREDIT\_\_\_\_983\_5

161. LabelPCount\_bureau\_train\_csv\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

162. LabelPCountDistinct\_bureau\_balance\_preprocessed\_train\_csv\_STATUS\_\_where\_STATUS\_not\_in\_\_C\_\_0\_\_X\_

163. LabelPCountDistinct\_bureau\_train\_csv\_CREDIT\_ACTIVE\_\_where\_DAYS\_ENDDATE\_FACT\_\_\_\_\_1678\_5

164. LabelPCountDistinct\_credit\_card\_balance\_train\_csv\_NAME\_CONTRACT\_STATUS\_\_where\_AMT\_RECIVABLE\_\_\_0\_0225

165. LabelPCountDistinct\_previous\_application\_train\_csv\_CODE\_REJECT\_REASON\_

166. LabelPCountDistinct\_previous\_application\_train\_csv\_NAME\_CONTRACT\_STATUS\_

167. LabelPDAYS\_BIRTH

168. LabelPDAYS\_EMPLOYED

169. LabelPDAYS\_ID\_PUBLISH

170. LabelPDEF\_30\_CNT\_SOCIAL\_CIRCLE

171. LabelPDEF\_60\_CNT\_SOCIAL\_CIRCLE

172. LabelPEXT\_SOURCE\_1

173. LabelPEXT\_SOURCE\_2

174. LabelPEXT\_SOURCE\_3

175. LabelPFLAG\_DOCUMENT\_3

176. LabelPFLAG\_EMP\_PHONE

177. LabelPFLAG\_OWN\_CAR

178. LabelPFLOORSMAX\_MEDI

179. LabelPFLOORSMAX\_MODE

180. LabelPFLOORSMIN\_MEDI

181. LabelPLIVINGAPARTMENTS\_MEDI

182. LabelPLIVINGAREA\_AVG

183. LabelPMax\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_CNT\_INSTALMENT\_FUTURE\_\_\_\_7\_5

184. LabelPMax\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_SK\_DPD\_\_\_0\_5

185. LabelPMax\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

186. LabelPMax\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

187. LabelPMax\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

188. LabelPMax\_bureau\_train\_csv\_CREDIT\_DAY\_OVERDUE\_\_where\_AMT\_CREDIT\_SUM\_OVERDUE\_\_\_0\_0225

189. LabelPMax\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

190. LabelPMax\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_DAYS\_CREDIT\_\_\_\_983\_5

191. LabelPMax\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

192. LabelPMax\_bureau\_train\_csv\_DAYS\_CREDIT\_UPDATE\_\_where\_CREDIT\_DAY\_OVERDUE\_\_\_0\_5

193. LabelPMax\_bureau\_train\_csv\_SK\_ID\_BUREAU\_\_where\_AMT\_CREDIT\_SUM\_OVERDUE\_\_\_\_0\_0225

194. LabelPMax\_credit\_card\_balance\_train\_csv\_CNT\_DRAWINGS\_CURRENT\_

195. LabelPMax\_installments\_payments\_train\_csv\_AMT\_INSTALMENT\_

196. LabelPMax\_installments\_payments\_train\_csv\_AMT\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_\_8088\_8175

197. LabelPMax\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_AMT\_INSTALMENT\_in\_\_8783\_3025\_\_16549\_6725\_

198. LabelPMax\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_NUM\_INSTALMENT\_VERSION\_in\_\_0\_5\_\_1\_5\_

199. LabelPMax\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_SK\_ID\_PREV\_\_\_\_1897795\_5

200. LabelPMax\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_

201. LabelPMax\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_369\_5

202. LabelPMax\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_\_830\_5

203. LabelPMax\_previous\_application\_train\_csv\_AMT\_DOWN\_PAYMENT\_

204. LabelPMax\_previous\_application\_train\_csv\_CNT\_PAYMENT\_

205. LabelPMean\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_CNT\_INSTALMENT\_\_\_24\_5

206. LabelPMean\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_SK\_ID\_PREV\_\_\_\_1897266

207. LabelPMean\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_SK\_ID\_PREV\_\_\_1897266

208. LabelPMean\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

209. LabelPMean\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_MONTHS\_BALANCE\_\_\_\_27\_5

210. LabelPMean\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_DEF\_\_where\_NAME\_CONTRACT\_STATUS\_\_\_Active

211. LabelPMean\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_AMT\_CREDIT\_SUM\_LIMIT\_\_\_\_0\_0225

212. LabelPMean\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_CREDIT\_DAY\_OVERDUE\_\_\_\_0\_5

213. LabelPMean\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

214. LabelPMean\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_DEBT\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405

215. LabelPMean\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_\_0\_0675

216. LabelPMean\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_OVERDUE\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed

217. LabelPMean\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_CREDIT\_CURRENCY\_\_\_currency\_1

218. LabelPMean\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_DAYS\_CREDIT\_\_\_\_983\_5

219. LabelPMean\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

220. LabelPMean\_credit\_card\_balance\_train\_csv\_AMT\_CREDIT\_LIMIT\_ACTUAL\_\_where\_AMT\_BALANCE\_\_\_\_0\_0225

221. LabelPMean\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_AMT\_INSTALMENT\_\_\_8783\_3025

222. LabelPMean\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_NUM\_INSTALMENT\_VERSION\_\_\_\_1\_5

223. LabelPMean\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45

224. LabelPMean\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_369\_5

225. LabelPMean\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_NUMBER\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45

226. LabelPMean\_previous\_application\_train\_csv\_DAYS\_FIRST\_DRAWING\_

227. LabelPMedian\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

228. LabelPMedian\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_MONTHS\_BALANCE\_\_\_\_12\_5

229. LabelPMedian\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_CREDIT\_\_\_\_983\_5

230. LabelPMedian\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

231. LabelPMedian\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_\_where\_AMT\_CREDIT\_SUM\_OVERDUE\_\_\_0\_0225

232. LabelPMedian\_bureau\_train\_csv\_DAYS\_CREDIT\_

233. LabelPMedian\_bureau\_train\_csv\_DAYS\_CREDIT\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

234. LabelPMedian\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

235. LabelPMedian\_credit\_card\_balance\_train\_csv\_AMT\_RECIVABLE\_\_where\_SK\_DPD\_DEF\_\_\_\_0\_5

236. LabelPMedian\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_NUM\_INSTALMENT\_VERSION\_in\_\_0\_5\_\_1\_5\_

237. LabelPMedian\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_\_1663\_5

238. LabelPMedian\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_NUMBER\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45

239. LabelPMedian\_previous\_application\_train\_csv\_AMT\_DOWN\_PAYMENT\_

240. LabelPMedian\_previous\_application\_train\_csv\_RATE\_DOWN\_PAYMENT\_

241. LabelPMin\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_

242. LabelPMin\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed

243. LabelPMin\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

244. LabelPMin\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_LIMIT\_\_\_0\_0225

245. LabelPMin\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed

246. LabelPMin\_bureau\_train\_csv\_DAYS\_CREDIT\_UPDATE\_\_where\_CREDIT\_TYPE\_\_\_Consumer\_credit

247. LabelPMin\_bureau\_train\_csv\_DAYS\_CREDIT\_UPDATE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

248. LabelPMin\_credit\_card\_balance\_train\_csv\_AMT\_DRAWINGS\_OTHER\_CURRENT\_

249. LabelPMin\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_AMT\_INSTALMENT\_\_\_8783\_3025

250. LabelPMin\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_DAYS\_ENTRY\_PAYMENT\_\_\_\_\_830\_5

251. LabelPMin\_previous\_application\_train\_csv\_HOUR\_APPR\_PROCESS\_START\_

252. LabelPMin\_previous\_application\_train\_csv\_RATE\_DOWN\_PAYMENT\_

253. LabelPMode\_bureau\_balance\_preprocessed\_train\_csv\_STATUS\_\_where\_STATUS\_not\_in\_\_C\_\_0\_\_X\_

254. LabelPMode\_bureau\_train\_csv\_CREDIT\_ACTIVE\_\_where\_CREDIT\_CURRENCY\_\_\_currency\_1

255. LabelPMode\_bureau\_train\_csv\_CREDIT\_ACTIVE\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

256. LabelPMode\_bureau\_train\_csv\_CREDIT\_TYPE\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

257. LabelPMode\_previous\_application\_train\_csv\_CODE\_REJECT\_REASON\_

258. LabelPMode\_previous\_application\_train\_csv\_NAME\_CONTRACT\_STATUS\_

259. LabelPMode\_previous\_application\_train\_csv\_NAME\_SELLER\_INDUSTRY\_

260. LabelPNAME\_CONTRACT\_TYPE

261. LabelPNAME\_EDUCATION\_TYPE

262. LabelPNAME\_FAMILY\_STATUS

263. LabelPNAME\_INCOME\_TYPE

264. LabelPOCCUPATION\_TYPE

265. LabelPORGANIZATION\_TYPE

266. LabelPOWN\_CAR\_AGE

267. LabelPREGION\_RATING\_CLIENT

268. LabelPREGION\_RATING\_CLIENT\_W\_CITY

269. LabelPREG\_CITY\_NOT\_LIVE\_CITY

270. LabelPREG\_CITY\_NOT\_WORK\_CITY

271. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_CNT\_INSTALMENT\_FUTURE\_\_where\_MONTHS\_BALANCE\_\_\_\_27\_5

272. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_CNT\_INSTALMENT\_FUTURE\_in\_\_3\_5\_\_7\_5\_

273. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_MONTHS\_BALANCE\_\_\_\_\_27\_5

274. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_\_where\_CNT\_INSTALMENT\_\_\_\_12\_5

275. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_DEF\_

276. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_SK\_DPD\_DEF\_\_where\_CNT\_INSTALMENT\_\_\_24\_5

277. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_SK\_ID\_PREV\_\_where\_CNT\_INSTALMENT\_FUTURE\_in\_\_3\_5\_\_7\_5\_

278. LabelPStdDev\_POS\_CASH\_balance\_train\_csv\_SK\_ID\_PREV\_\_where\_CNT\_INSTALMENT\_FUTURE\_in\_\_7\_5\_\_13\_5\_

279. LabelPStdDev\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405

280. LabelPStdDev\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_ENDDATE\_FACT\_\_\_\_\_1678\_5

281. LabelPStdDev\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_DEBT\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

282. LabelPStdDev\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405

283. LabelPStdDev\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

284. LabelPStdDev\_credit\_card\_balance\_train\_csv\_AMT\_DRAWINGS\_ATM\_CURRENT\_

285. LabelPStdDev\_installments\_payments\_train\_csv\_AMT\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_15929\_28

286. LabelPStdDev\_installments\_payments\_train\_csv\_AMT\_PAYMENT\_\_where\_AMT\_INSTALMENT\_in\_\_8783\_3025\_\_16549\_6725\_

287. LabelPStdDev\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_\_where\_AMT\_PAYMENT\_in\_\_8088\_8175\_\_15929\_28\_

288. LabelPStdDev\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_NUMBER\_\_where\_NUM\_INSTALMENT\_NUMBER\_\_\_8\_5

289. LabelPStdDev\_installments\_payments\_train\_csv\_NUM\_INSTALMENT\_VERSION\_\_where\_NUM\_INSTALMENT\_VERSION\_\_\_1\_5

290. LabelPStdDev\_previous\_application\_train\_csv\_RATE\_DOWN\_PAYMENT\_

291. LabelPSum\_POS\_CASH\_balance\_train\_csv\_MONTHS\_BALANCE\_\_where\_CNT\_INSTALMENT\_\_\_24\_5

292. LabelPSum\_POS\_CASH\_balance\_train\_csv\_SK\_ID\_PREV\_\_where\_SK\_DPD\_\_\_\_0\_5

293. LabelPSum\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_AMT\_CREDIT\_SUM\_DEBT\_\_\_0\_0675

294. LabelPSum\_bureau\_train\_csv\_AMT\_CREDIT\_MAX\_OVERDUE\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

295. LabelPSum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_DEBT\_\_where\_CREDIT\_TYPE\_\_\_\_Consumer\_credit

296. LabelPSum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405

297. LabelPSum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_LIMIT\_\_where\_DAYS\_CREDIT\_UPDATE\_\_\_\_403\_5

298. LabelPSum\_bureau\_train\_csv\_AMT\_CREDIT\_SUM\_OVERDUE\_\_where\_CREDIT\_ACTIVE\_\_\_\_Closed

299. LabelPSum\_bureau\_train\_csv\_DAYS\_CREDIT\_ENDDATE\_\_where\_AMT\_CREDIT\_SUM\_\_\_124731\_405

300. LabelPSum\_bureau\_train\_csv\_DAYS\_ENDDATE\_FACT\_\_where\_CNT\_CREDIT\_PROLONG\_\_\_\_0\_5

301. LabelPSum\_bureau\_train\_csv\_SK\_ID\_BUREAU\_\_where\_CREDIT\_TYPE\_\_\_\_Consumer\_credit

302. LabelPSum\_bureau\_train\_csv\_SK\_ID\_BUREAU\_\_where\_DAYS\_CREDIT\_\_\_\_\_983\_5

303. LabelPSum\_bureau\_train\_csv\_SK\_ID\_BUREAU\_\_where\_DAYS\_CREDIT\_ENDDATE\_\_\_\_426\_5

304. LabelPSum\_credit\_card\_balance\_train\_csv\_CNT\_DRAWINGS\_ATM\_CURRENT\_\_where\_AMT\_INST\_MIN\_REGULARITY\_\_\_0\_0225

305. LabelPSum\_installments\_payments\_train\_csv\_AMT\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_15929\_28

306. LabelPSum\_installments\_payments\_train\_csv\_DAYS\_ENTRY\_PAYMENT\_\_where\_DAYS\_INSTALMENT\_in\_\_\_1654\_5\_\_\_821\_5\_

307. LabelPSum\_installments\_payments\_train\_csv\_DAYS\_INSTALMENT\_\_where\_AMT\_PAYMENT\_\_\_\_3375\_45

308. LabelPSum\_installments\_payments\_train\_csv\_SK\_ID\_PREV\_\_where\_AMT\_INSTALMENT\_\_\_16549\_6725

309. LabelPYEARS\_BEGINEXPLUATATION\_AVG

💡 Tip: Consider feature importance from HistGradientBoosting for further analysis