**2 Dimenzió:**

**Átlagos relatív eltérés algoritmusonként 2D-ben**



**Átlagos ládaszám algoritmusonként:**

|  |  |
| --- | --- |
| **Sorcímkék** | **Átlag / ladak\_szama** |
| dot\_product2\_lada\_reciprocal\_average | 233,03 |
| dot\_product2\_lada\_average | 225,89 |
| dot\_product2\_lada\_exponential | 225,19 |
| FFD\_prod\_elem | 223,43 |
| FFD\_prod\_lada | 223,43 |
| FFD\_sum\_elem | 223,42 |
| FFD\_sum\_lada | 223,42 |
| FFD\_avg\_elem | 223,42 |
| FFD\_avg\_lada | 223,42 |
| dot\_product1\_lada\_reciprocal\_average | 222,97 |
| l2\_norm\_of\_slacks\_lada\_exponential | 222,51 |
| dot\_product1\_lada\_average | 222,51 |
| l2\_norm\_of\_slacks\_lada\_average | 222,49 |
| l2\_norm\_of\_slacks\_lada\_reciprocal\_average | 222,47 |
| dot\_product1\_lada\_exponential | 222,42 |
| **Végösszeg** | **224,0009259** |

**Egy példa:**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |
|  | 2D | | | | | | | |
|  | class1\_100 | | | | | | | |
|  | példány1 | | példány2 | | példány3 | | példány4 | |
| Alsó Korlát | 60 | | 63 | | 52 | | 52 | |
| FFD\_sum\_elem | 64 | 4 | 75 | 12 | 58 | 6 | 61 | 9 |
| FFD\_prod\_elem | 64 | 4 | 75 | 12 | 57 | 5 | 61 | 9 |
| FFD\_avg\_elem | 64 | 4 | 75 | 12 | 58 | 6 | 61 | 9 |
| FFD\_sum\_lada | 64 | 4 | 75 | 12 | 58 | 6 | 61 | 9 |
| FFD\_prod\_lada | 64 | 4 | 75 | 12 | 57 | 5 | 61 | 9 |
| FFD\_avg\_lada | 64 | 4 | 75 | 12 | 58 | 6 | 61 | 9 |
| dp1\_average | 64 | 4 | 75 | 12 | 58 | 6 | 61 | 9 |
| dp1\_exponential | 64 | 4 | 75 | 12 | 58 | 6 | 61 | 9 |
| dp1\_reciprocal | 64 | 4 | 75 | 12 | 58 | 6 | 61 | 9 |
| dp2\_average | 66 | 6 | 76 | 13 | 60 | 8 | 63 | 11 |
| dp2\_exponential | 65 | 5 | 76 | 13 | 59 | 7 | 63 | 11 |
| dp2\_reciprocal | 65 | 5 | 75 | 12 | 60 | 8 | 62 | 10 |
| l2\_average | 64 | 4 | 75 | 12 | 58 | 6 | 61 | 9 |
| l2\_exponential | 64 | 4 | 75 | 12 | 58 | 6 | 61 | 9 |
| l2\_reciprocal | 64 | 4 | 75 | 12 | 58 | 6 | 61 | 9 |

**3 Dimenzió:**

**Átlagos relatív eltérés algoritmusonként 3D-ben**



**Átlagos ládaszám algoritmusonként:**

|  |  |
| --- | --- |
| **Sorcímkék** | **Átlag / ladak\_szama** |
| dot\_product2\_lada\_reciprocal\_average | 226,08 |
| dot\_product2\_lada\_average | 224,17 |
| dot\_product2\_lada\_exponential | 224,00 |
| FFD\_sum\_lada | 223,49 |
| FFD\_avg\_elem | 223,49 |
| FFD\_sum\_elem | 223,49 |
| FFD\_avg\_lada | 223,49 |
| FFD\_prod\_elem | 223,22 |
| FFD\_prod\_lada | 223,22 |
| dot\_product1\_lada\_reciprocal\_average | 221,39 |
| dot\_product1\_lada\_exponential | 221,32 |
| dot\_product1\_lada\_average | 221,31 |
| l2\_norm\_of\_slacks\_lada\_reciprocal\_average | 221,15 |
| l2\_norm\_of\_slacks\_lada\_average | 220,92 |
| l2\_norm\_of\_slacks\_lada\_exponential | 220,78 |
| **Végösszeg** | **222,7666667** |

**Egy példa:**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 3D | | | | | | | |
|  | class2\_500 | | | | | | | |
|  | példány1 | | példány2 | | példány3 | | példány4 | |
| Alsó Korlát | 125 | | 128 | | 128 | | 128 | |
| FFD\_sum\_elem | 141 | 16 | 144 | 16 | 142 | 14 | 142 | 14 |
| FFD\_prod\_elem | 142 | 17 | 143 | 15 | 143 | 15 | 143 | 15 |
| FFD\_avg\_elem | 141 | 16 | 144 | 16 | 142 | 14 | 142 | 14 |
| FFD\_sum\_lada | 141 | 16 | 144 | 16 | 142 | 14 | 142 | 14 |
| FFD\_prod\_lada | 142 | 17 | 143 | 15 | 143 | 15 | 143 | 15 |
| FFD\_avg\_lada | 141 | 16 | 144 | 16 | 142 | 14 | 142 | 14 |
| dp1\_average | 134 | 9 | 137 | 9 | 135 | 7 | 136 | 8 |
| dp1\_exponential | 135 | 10 | 137 | 9 | 135 | 7 | 136 | 8 |
| dp1\_reciprocal | 134 | 9 | 136 | 8 | 134 | 6 | 135 | 7 |
| dp2\_average | 137 | 12 | 141 | 13 | 139 | 11 | 142 | 14 |
| dp2\_exponential | 138 | 13 | 142 | 14 | 139 | 11 | 140 | 12 |
| dp2\_reciprocal | 137 | 12 | 142 | 14 | 139 | 11 | 140 | 12 |
| l2\_average | 134 | 9 | 136 | 8 | 135 | 7 | 134 | 6 |
| l2\_exponential | 134 | 9 | 136 | 8 | 135 | 7 | 134 | 6 |
| l2\_reciprocal | 134 | 9 | 135 | 7 | 135 | 7 | 134 | 6 |

**4 Dimenzió:**

**Átlagos relatív eltérés algoritmusonként 4D-ben**

|  |  |
| --- | --- |
| **Sorcímkék** | **Átlag / relativ elteres** |
| l2\_norm\_of\_slacks\_lada\_average | 16,97% |
| l2\_norm\_of\_slacks\_lada\_reciprocal\_average | 17,06% |
| dot\_product1\_lada\_average | 17,12% |
| l2\_norm\_of\_slacks\_lada\_exponential | 17,15% |
| dot\_product1\_lada\_reciprocal\_average | 17,15% |
| dot\_product1\_lada\_exponential | 17,33% |
| FFD\_avg\_lada | 18,21% |
| FFD\_sum\_elem | 18,21% |
| FFD\_sum\_lada | 18,21% |
| FFD\_avg\_elem | 18,21% |
| FFD\_prod\_elem | 18,63% |
| FFD\_prod\_lada | 18,63% |
| dot\_product2\_lada\_exponential | 19,63% |
| dot\_product2\_lada\_average | 19,64% |
| dot\_product2\_lada\_reciprocal\_average | 19,72% |
| **Végösszeg** | **0,1812** |

**Átlagos ládaszám algoritmusonként:**

|  |  |
| --- | --- |
| **Sorcímkék** | **Átlag / ladak\_szama** |
| l2\_norm\_of\_slacks\_lada\_average | 225,53 |
| l2\_norm\_of\_slacks\_lada\_exponential | 225,65 |
| l2\_norm\_of\_slacks\_lada\_reciprocal\_average | 225,76 |
| dot\_product1\_lada\_average | 225,89 |
| dot\_product1\_lada\_reciprocal\_average | 226,07 |
| dot\_product1\_lada\_exponential | 226,07 |
| FFD\_avg\_lada | 228,03 |
| FFD\_sum\_elem | 228,03 |
| FFD\_sum\_lada | 228,03 |
| FFD\_avg\_elem | 228,03 |
| FFD\_prod\_elem | 228,31 |
| FFD\_prod\_lada | 228,31 |
| dot\_product2\_lada\_average | 229,72 |
| dot\_product2\_lada\_exponential | 229,75 |
| dot\_product2\_lada\_reciprocal\_average | 230,57 |
| **Végösszeg** | **227,5824074** |

**Az algoritmusok átlagos relatív eltérése osztályonként:**

**Példák:**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 4D | | | | | | | |
|  | class4\_1000 | | | | | | | |
|  | példány1 | | példány2 | | példány3 | | példány4 | |
| Alsó Korlát | 310 | | 312 | | 312 | | 314 | |
| FFD\_sum\_elem | 338 | 28 | 336 | 24 | 338 | 26 | 340 | 26 |
| FFD\_prod\_elem | 338 | 28 | 340 | 28 | 340 | 28 | 341 | 27 |
| FFD\_avg\_elem | 338 | 28 | 336 | 24 | 338 | 26 | 340 | 26 |
| FFD\_sum\_lada | 338 | 28 | 336 | 24 | 338 | 26 | 340 | 26 |
| FFD\_prod\_lada | 338 | 28 | 340 | 28 | 340 | 28 | 341 | 27 |
| FFD\_avg\_lada | 338 | 28 | 336 | 24 | 338 | 26 | 340 | 26 |
| dp1\_average | 328 | 18 | 330 | 18 | 329 | 17 | 333 | 19 |
| dp1\_exponential | 328 | 18 | 330 | 18 | 330 | 18 | 332 | 18 |
| dp1\_reciprocal | 329 | 19 | 331 | 19 | 330 | 18 | 333 | 19 |
| dp2\_average | 336 | 26 | 338 | 26 | 339 | 27 | 342 | 28 |
| dp2\_exponential | 336 | 26 | 339 | 27 | 339 | 27 | 342 | 28 |
| dp2\_reciprocal | 336 | 26 | 338 | 26 | 343 | 31 | 348 | 34 |
| l2\_average | 328 | 18 | 330 | 18 | 329 | 17 | 333 | 19 |
| l2\_exponential | 328 | 18 | 331 | 19 | 329 | 17 | 333 | 19 |
| l2\_reciprocal | 328 | 18 | 330 | 18 | 330 | 18 | 333 | 19 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 4D | | | | | | | |
|  | class3\_1000 | | | | | | | |
|  | példány1 | | példány2 | | példány3 | | példány4 | |
| Alsó Korlát | 501 | | 505 | | 504 | | 501 | |
| FFD\_sum\_elem | 539 | 38 | 549 | 44 | 548 | 44 | 546 | 45 |
| FFD\_prod\_elem | 539 | 38 | 550 | 45 | 548 | 44 | 545 | 44 |
| FFD\_avg\_elem | 539 | 38 | 549 | 44 | 548 | 44 | 546 | 45 |
| FFD\_sum\_lada | 539 | 38 | 549 | 44 | 548 | 44 | 546 | 45 |
| FFD\_prod\_lada | 539 | 38 | 550 | 45 | 548 | 44 | 545 | 44 |
| FFD\_avg\_lada | 539 | 38 | 549 | 44 | 548 | 44 | 546 | 45 |
| dp1\_average | 538 | 37 | 549 | 44 | 547 | 43 | 544 | 43 |
| dp1\_exponential | 539 | 38 | 549 | 44 | 548 | 44 | 544 | 43 |
| dp1\_reciprocal | 538 | 37 | 548 | 43 | 547 | 43 | 545 | 44 |
| dp2\_average | 546 | 45 | 554 | 49 | 554 | 50 | 553 | 52 |
| dp2\_exponential | 546 | 45 | 553 | 48 | 553 | 49 | 551 | 50 |
| dp2\_reciprocal | 568 | 67 | 558 | 53 | 554 | 50 | 576 | 75 |
| l2\_average | 539 | 38 | 549 | 44 | 548 | 44 | 546 | 45 |
| l2\_exponential | 539 | 38 | 549 | 44 | 548 | 44 | 546 | 45 |
| l2\_reciprocal | 539 | 38 | 549 | 44 | 548 | 44 | 546 | 45 |