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Research Week 2

Results

**Original Matrices**

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| Simple3DMatrix: 10x10x10 | Pillar3DMatrix: 10x10x10 |
| JackieOS:Users:platypus:Desktop:research:week2:week2_images:originals:simple3DMatrix.png | JackieOS:Users:platypus:Desktop:research:week2:week2_images:originals:pillar3DMatrix.png |

**Tuned, No Seeds**

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| JackieOS:Users:platypus:Desktop:research:week2:week2_images:tuned_no_seeds:tuned1.png | Tuner: 1  (many random replacements, no seeds) |
| JackieOS:Users:platypus:Desktop:research:week2:week2_images:tuned_no_seeds:tuned5.png | Tuner: 5 |
| JackieOS:Users:platypus:Desktop:research:week2:week2_images:tuned_no_seeds:tuned10.png | Tuner: 10  (few random replacements, no seeds) |

**Tuned, Random Seeds**

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|  | Tuner: 3 (more replacements, larger volume)  Number of seeds: 2  Percentage of replacements allotted to each seed: 50%  **Note:** All replacements relate to seeds. |
|  | Tuner: 10 (fewer replacements, more concentrated)  Number of seeds: 2  Percentage of replacements allotted to each seed: 40%  **Note:** 80% of replacements relate to seeds. 20% are random. |

**Tuned, Provided Seeds**

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|  | Tuner: 5  Seeds locations: [1, 1, 1] and [10, 10, 10]  Percentage of replacements allotted to each seed: 50% |
|  | Tuner: 5  Seeds locations: [2, 2, 2] and [10, 10, 10]  Percentage of replacements allotted to each seed: 30% |
|  | Tuner: 10 (very selective)  Seeds locations: [1, 1, 1] and [10, 10, 10]  Percentage of replacements allotted to each seed: 30% |

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| A | JackieOS:Users:platypus:Desktop:research:week2:week2_images:tuner5:gen1:A.png | **Generation 1, Tuner: 5**  **Note:** A, B, C, D, and E matrices began as matrices of ones, twos, threes, fours, and fives, respectively.  **Note:** randomIndex1 and randomIndex2 refer to the matrices that are being combined randomly.  scaledTuner is related to the average fitting function value for the two matrices.  seeds is the number of seeds.  Settings for 5 crossovers:  JackieOS:Users:platypus:Desktop:research:week2:week2_images:tuner5:gen1:settings_gen1.png |
| B | JackieOS:Users:platypus:Desktop:research:week2:week2_images:tuner5:gen1:B.png |
| C | JackieOS:Users:platypus:Desktop:research:week2:week2_images:tuner5:gen1:C.png |
| D | JackieOS:Users:platypus:Desktop:research:week2:week2_images:tuner5:gen1:D.png |
| E | JackieOS:Users:platypus:Desktop:research:week2:week2_images:tuner5:gen1:E.png |
| A1 |  | **Generation 2, Tuner: 5**  Settings for 5 crossovers: |
| B1 |  |
| C1 |  |
| D1 |  |
| E1 |  |
| A2 |  | **Generation 3, Tuner: 5**  Settings for 5 crossovers: |
| B2 |  |
| D2 |  |
| E2 |  |

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| A |  | **Generation 2, Tuner: 10**  **Note:** Since the tuner is so selective, the generation 2 matrices are very similar. |
| B |  |