**Beats / min**

**Unfiltered Data**

|  |  |  |
| --- | --- | --- |
| **R Channel** | **G Channel** | **B Channel** |
| Mean squared error: 334.71  Coefficient of determination: -2.41  Mean Absolute Error: 13.62 | Mean squared error: 288.53  Coefficient of determination: -1.94  Mean Absolute Error: 11.91 | Mean squared error: 368.50  Coefficient of determination: -2.75  Mean Absolute Error: 13.70 |

**Filtered Data:**

Filter Type: Low Pass Butterworth

Filter parameters:

1. Nyquist freq = 15Hz (half of sampling rate i.e 30fps)
2. Cutoff freq = 0.5Hz

Note: Filter Applied by KAUST group is unknown

|  |  |  |  |
| --- | --- | --- | --- |
| **KAUST** | **R Channel** | **G Channel** | **B Channel** |
| Mean squared error: 10937389.66  Coefficient of determination: -111422.31  Mean Absolute Error: 483.00 | Mean squared error: 275.14  Coefficient of determination: -1.80  Mean Absolute Error: 12.77 | Mean squared error: 309.91  Coefficient of determination: -2.16  Mean Absolute Error: 12.31 | Mean squared error: 341.86  Coefficient of determination: -2.48  Mean Absolute Error: 12.64 |

**All Algorithms Results on Filtered R Channel Data**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Algorithm** | **Hyperparam** | **MSE** | **Coeff of Deter** | **MAE** |
| Linear Regression |  | 275.14 | -1.80 | 12.77 |
| SVR | C = 1, epsilon = 0.2 | 98.4 | 0.00 | 8.02 |
| Random Forest | nestimators = 100 | 74.9 | 0.24 | 6.52 |
| LGB | Lr=0.05 | 73.9 | 0.25 | 6.51 |

**O2**

Since the previous experiment in beats per min showed that top accuracy is achieved on filtered data, following results are only calculated on filtered data of r channel

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Algorithm** | **Hyperparam** | **MSE** | **Coeff of Deter** | **MAE** |
| Linear Regression |  | 275 | -1.180 | 12.77 |
| SVR | C = 1, epsilon = 0.2 | 96.53 | 0.02 | 7.78 |
| Random Forest | nestimators = 100 | 79.73 | 0.19 | 6.94 |
| LGB | Lr=0.05 | 84.23 | 0.14 | 7.40 |

**Perfusion Index**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Algorithm** | **Hyperparam** | **MSE** | **Coeff of Deter** | **MAE** |
| Linear Regression |  | 275 | -1.180 | 12.77 |
| SVR | C = 1, epsilon = 0.2 | 96.12 | 0.02 | 7.71 |
| Random Forest | nestimators = 100 | 77.64 | 0.21 | 7.97 |
| LGB | Lr=0.05 | 84.47 | 0.14 | 7.43 |