Baker Hughes Hackathon

Predictive Modeling (Team 2)

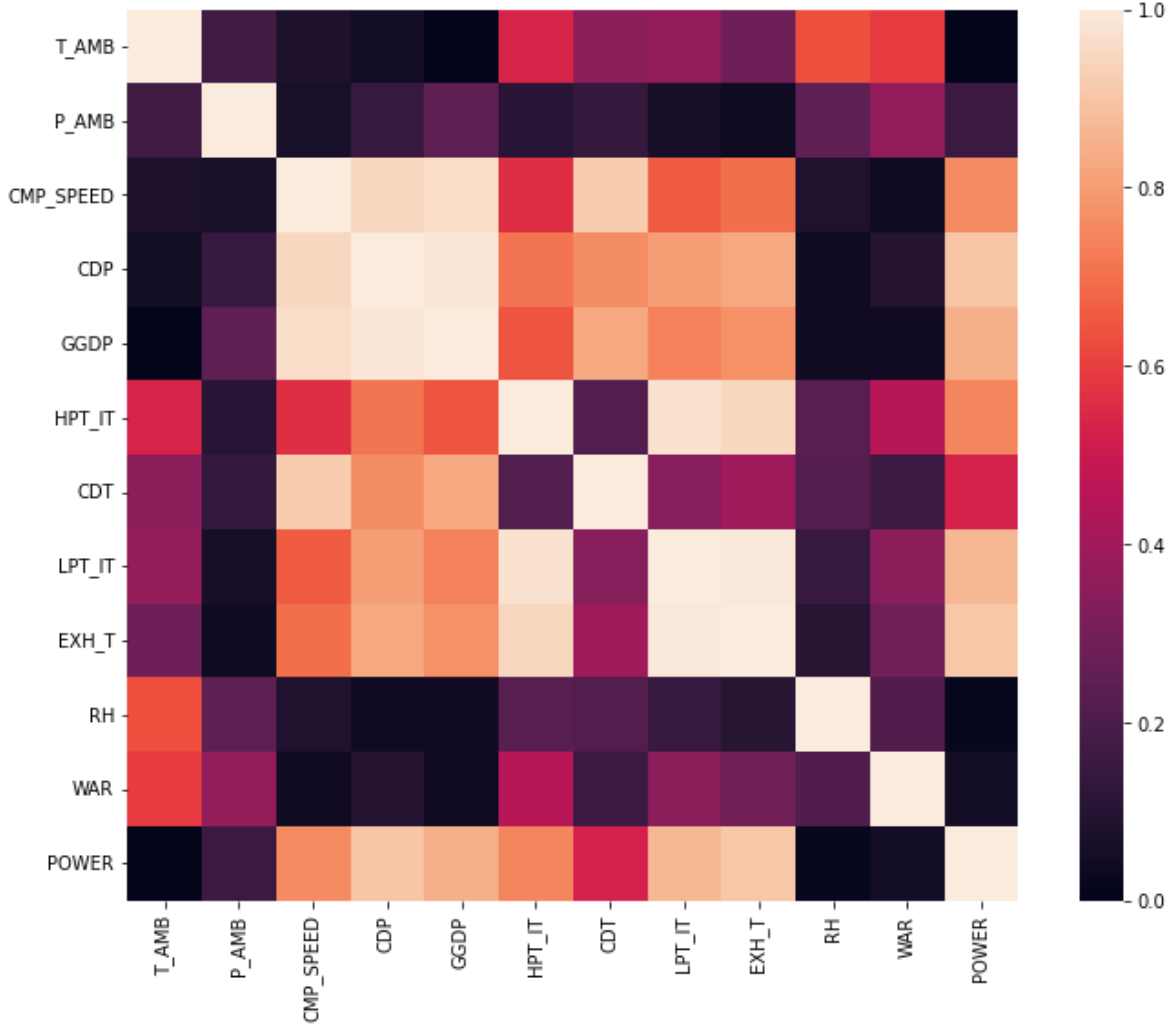
Isaura Ramírez Salazar
José David Romo López
Juan Diego Sanchez Díaz

Data Visualization

(all training data)

abs(CorrelationCoeff)

The clearer the better



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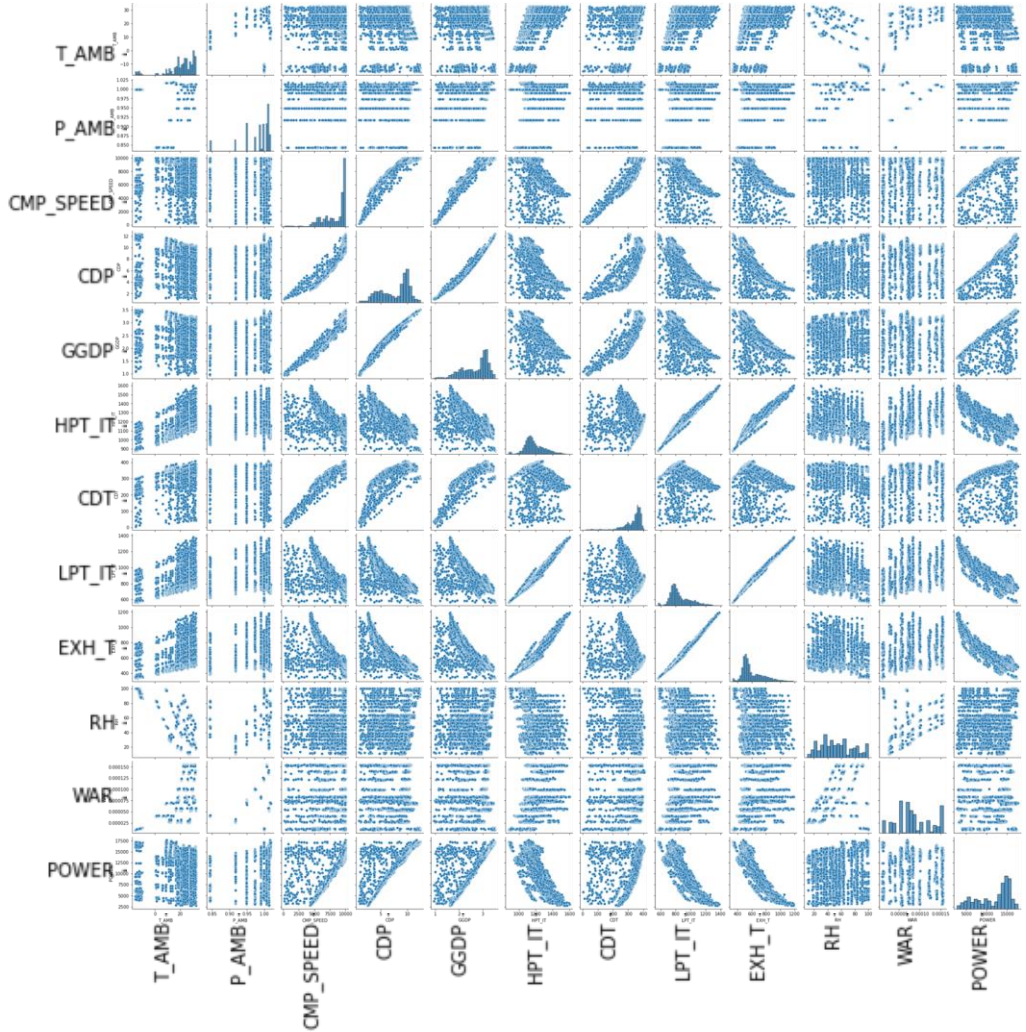

For us the interesting variables are in order:

```
POWER        1.000000
EXH_T        0.903272
CDP          0.898743
LPT_IT       0.863357
GGDP         0.846911
CMP_SPEED    0.758151
HPT_IT       0.746706
CDT          0.525526
P_AMB        0.155483
WAR          0.049835
RH           0.017927
T_AMB        0.004338
Name: POWER, dtype: float64
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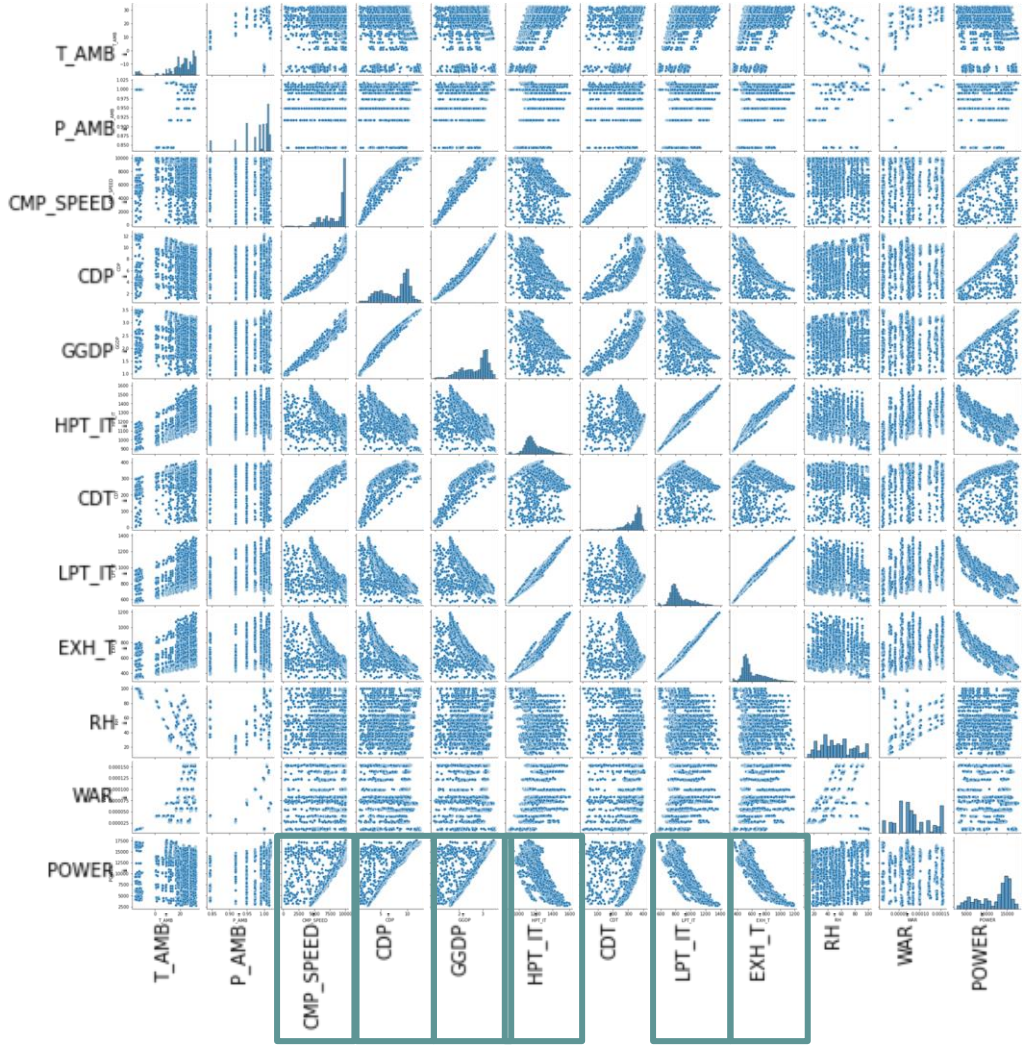

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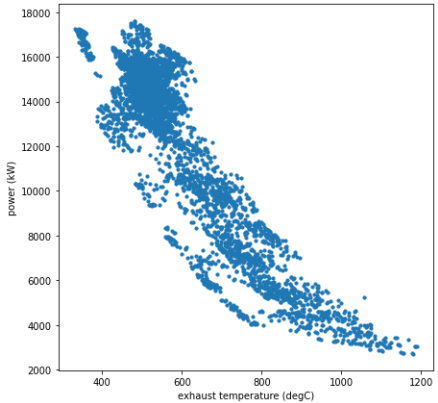
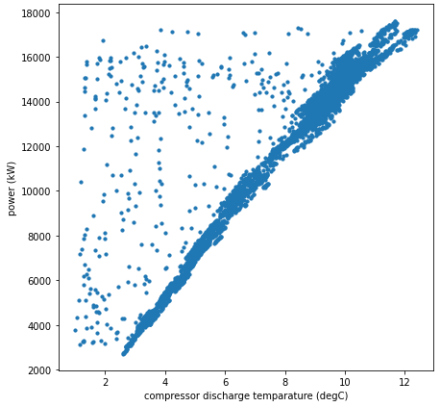
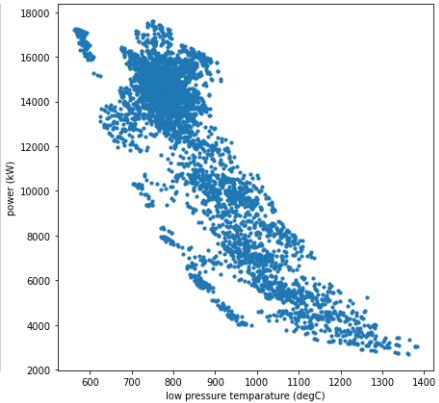
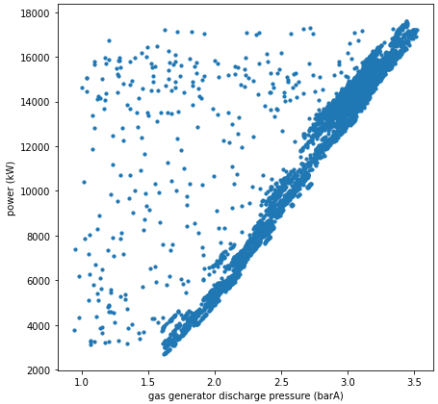
Data Visualization

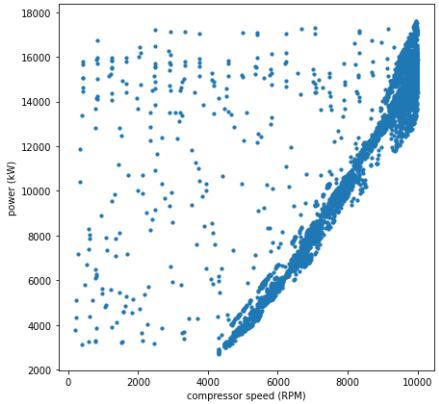
We visualize all the training data

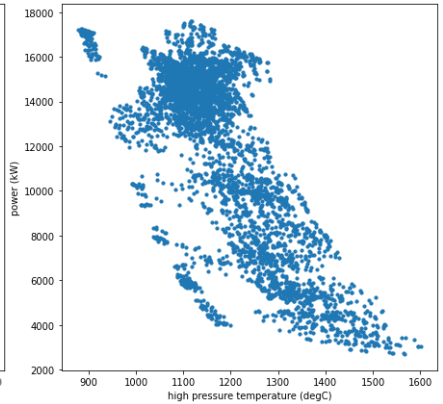










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Name: POWER, dtype: float64
```

Data Visualization

Maybe if we separate distint files. Could be a metadata depandence?

Doesn't look very important.

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EXH_T	0.903272
CDP	0.898743
LPT_IT	0.863357
GGDP	0.846911
CMP_SPEED	0.758151
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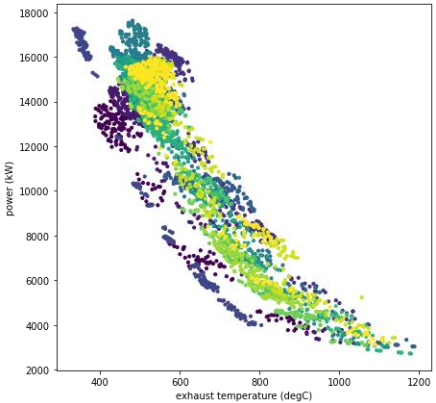
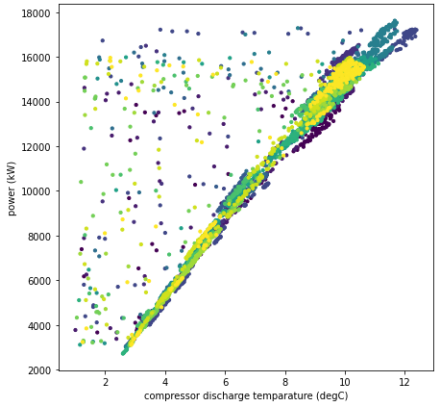
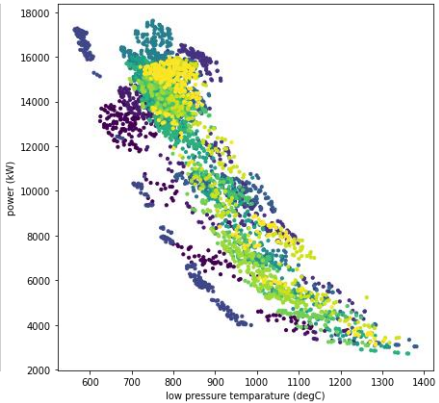
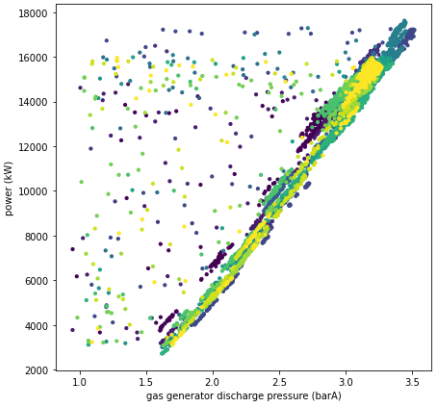
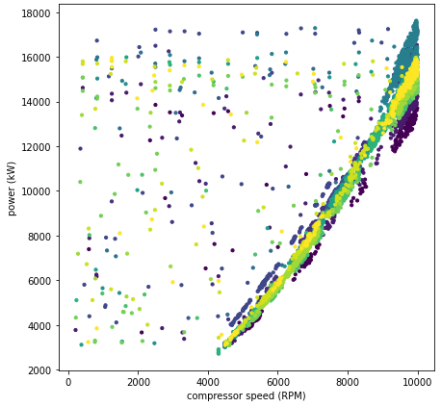
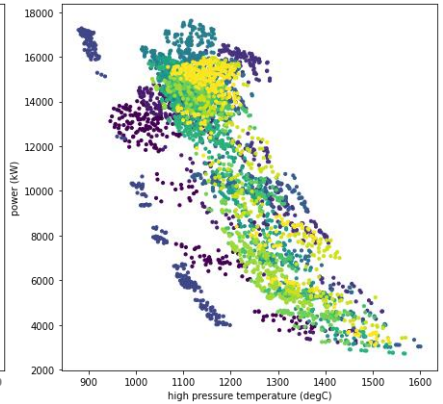










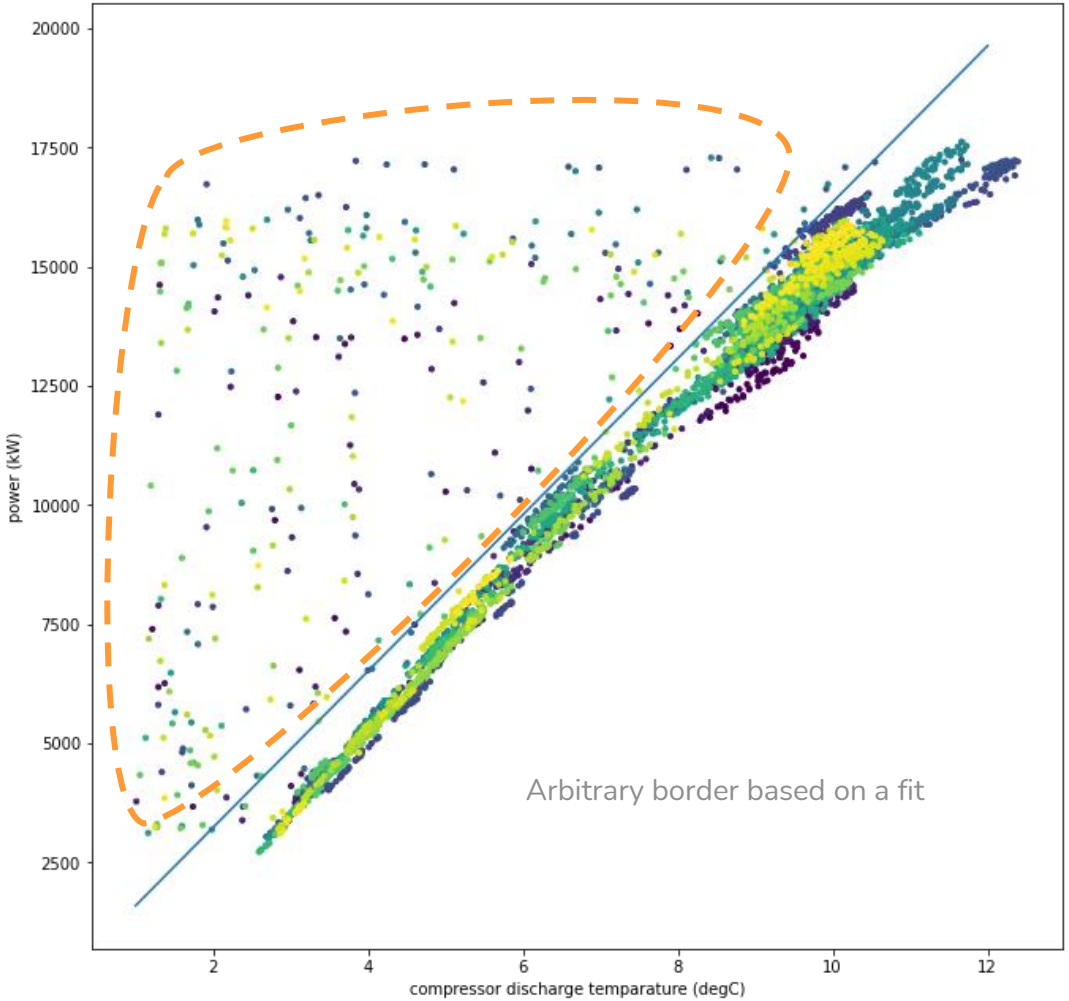


Data Visualization

‘Data’ + **‘Outliers’**

Data: Below the rect
‘Outliers’: Above the rect

The dependence power vs CDT looks like a linear dependence except from the presence of some ’outliers’

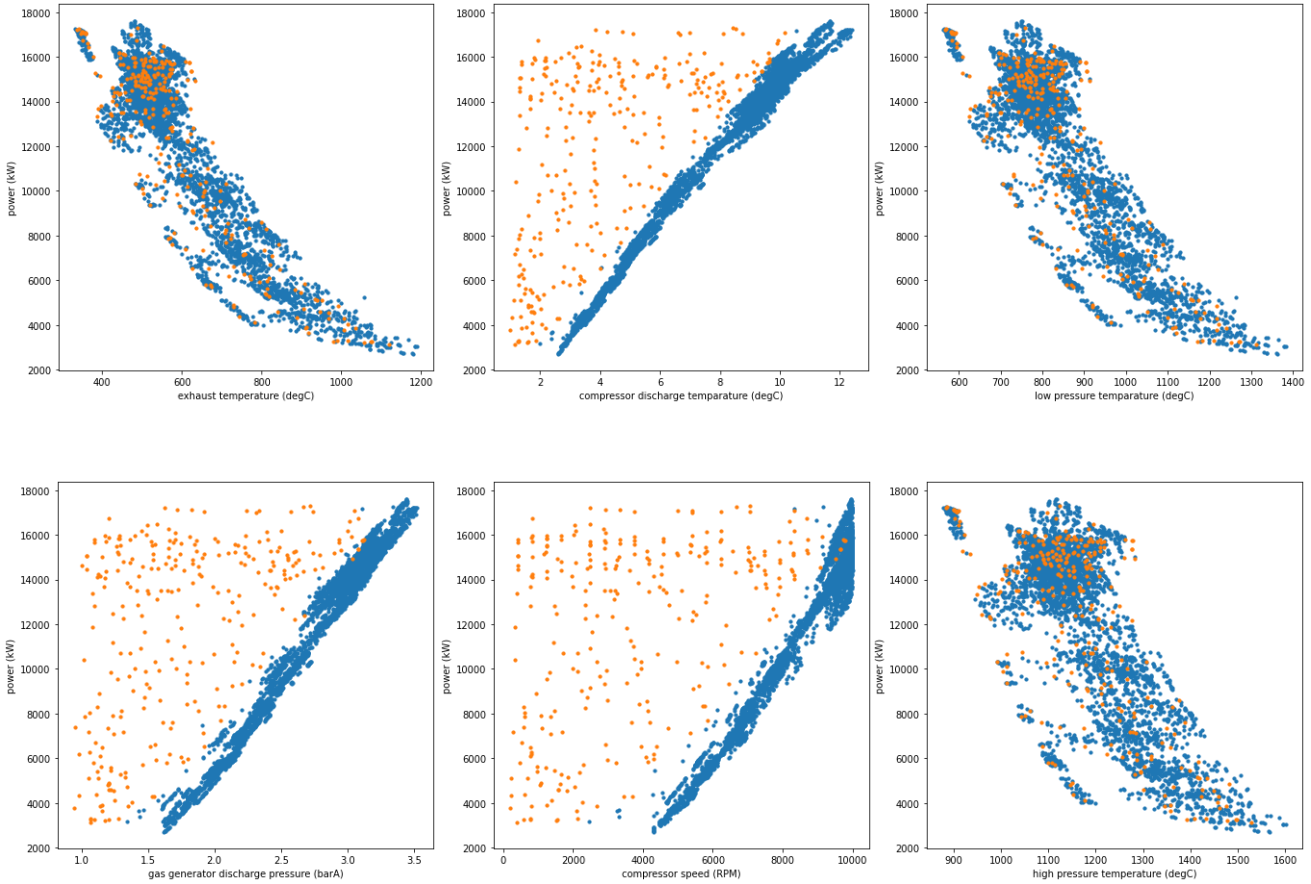


Data Visualization

'Data' + 'Outliers'

But, are they really outliers?

- ❑ They show a consistent behaviour.
- ❑ They are not <u>rare</u> ~6% of the sample

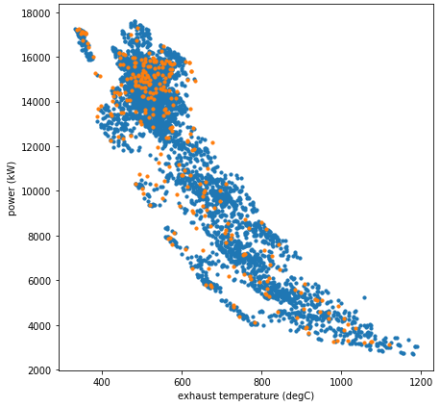


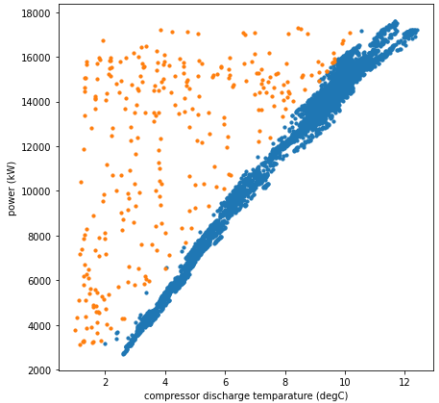
Data Visualization

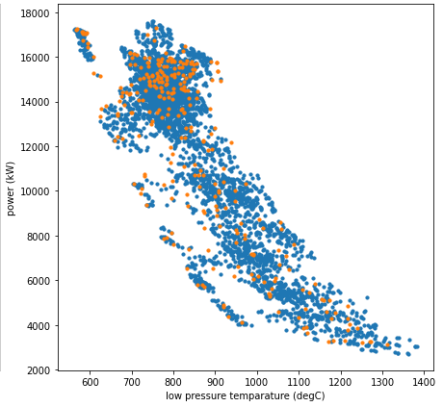
~~'Data'~~ + ~~'Outliers'~~

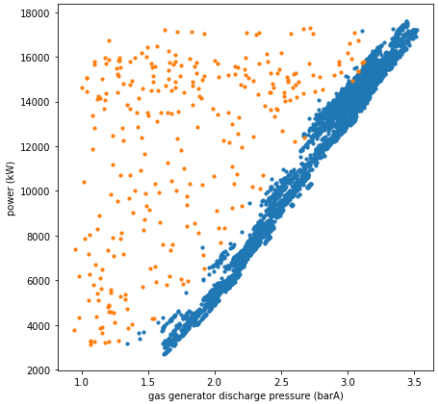
Blue type + **Orange type**

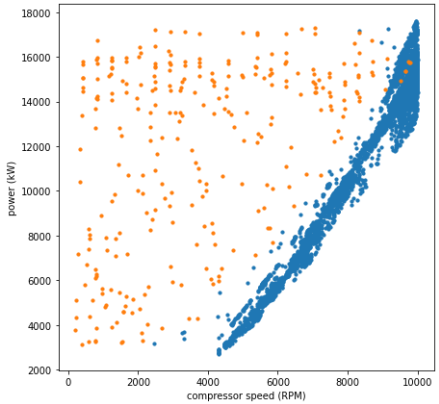
Each with a different estimator method

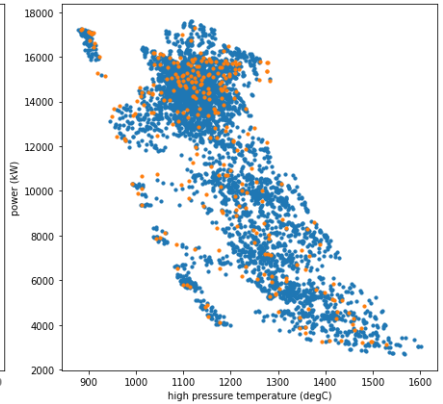








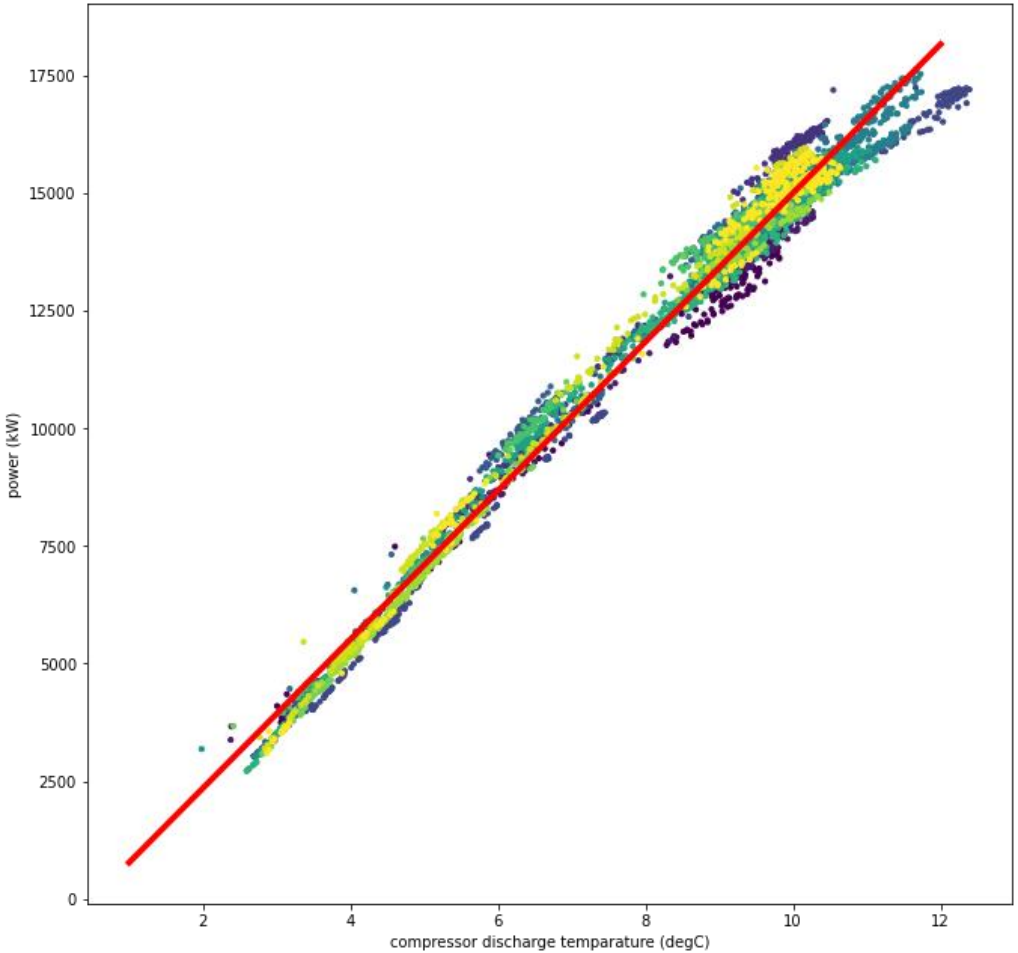




Predictors

Blue predictor

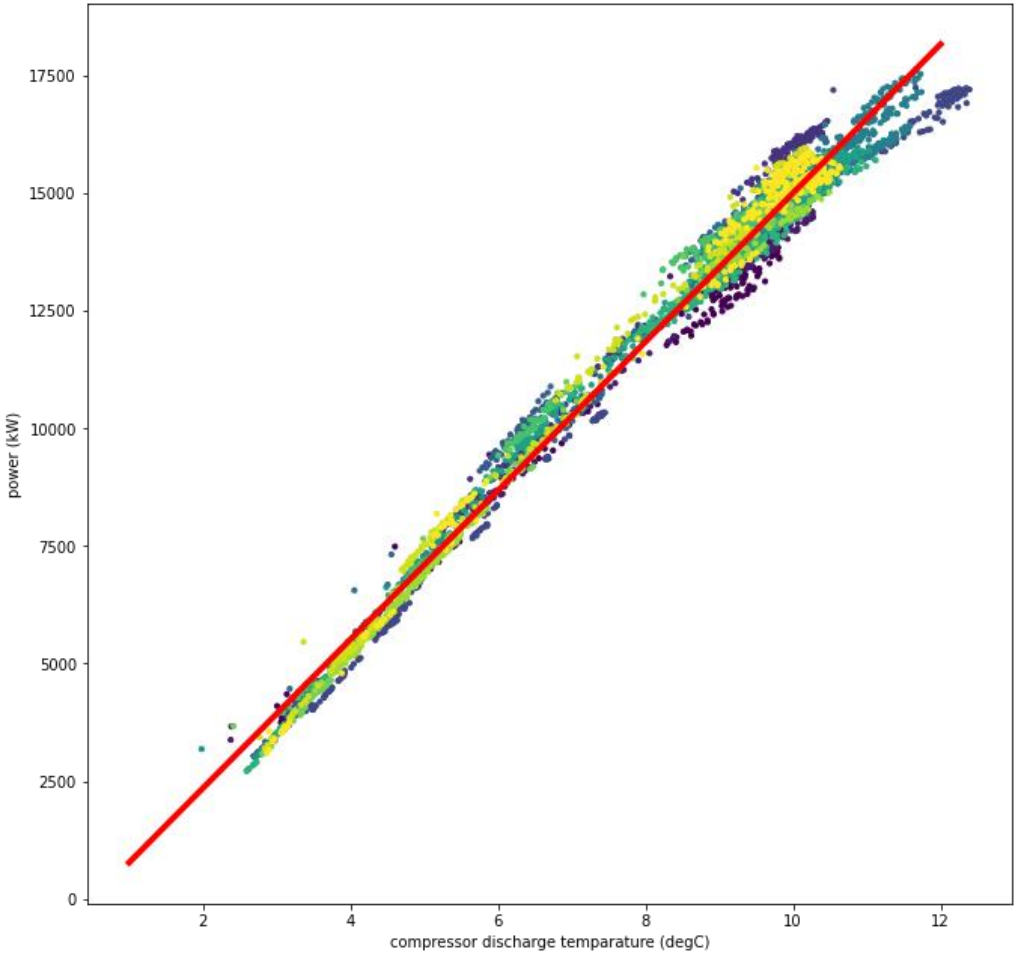
Linear Regression



Predictors

Orange predictor

Linear Regression



Data Visualization

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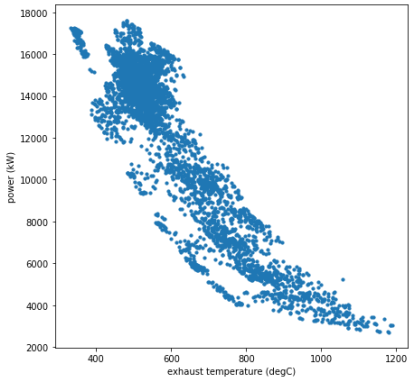

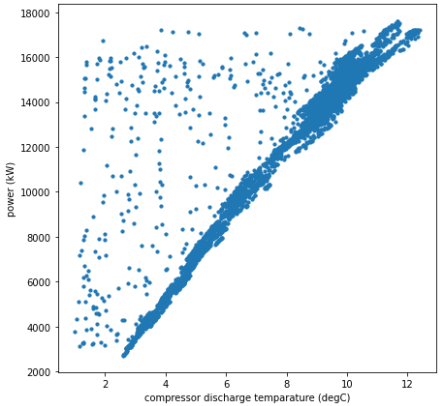

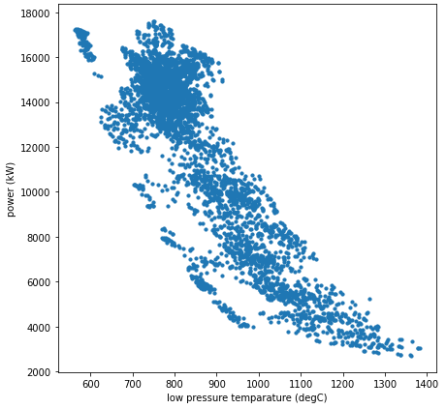

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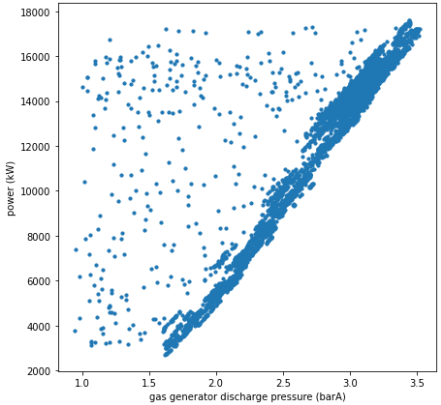

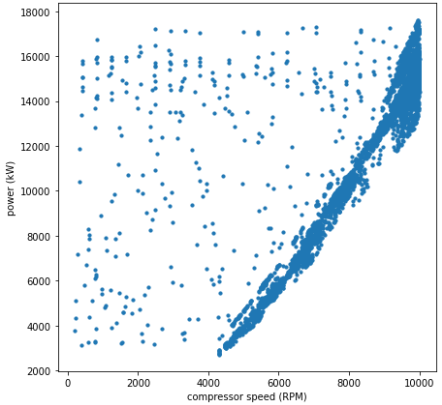

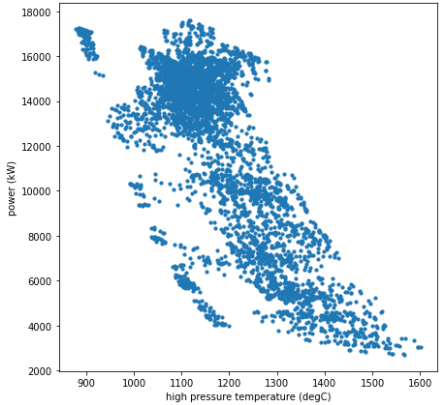

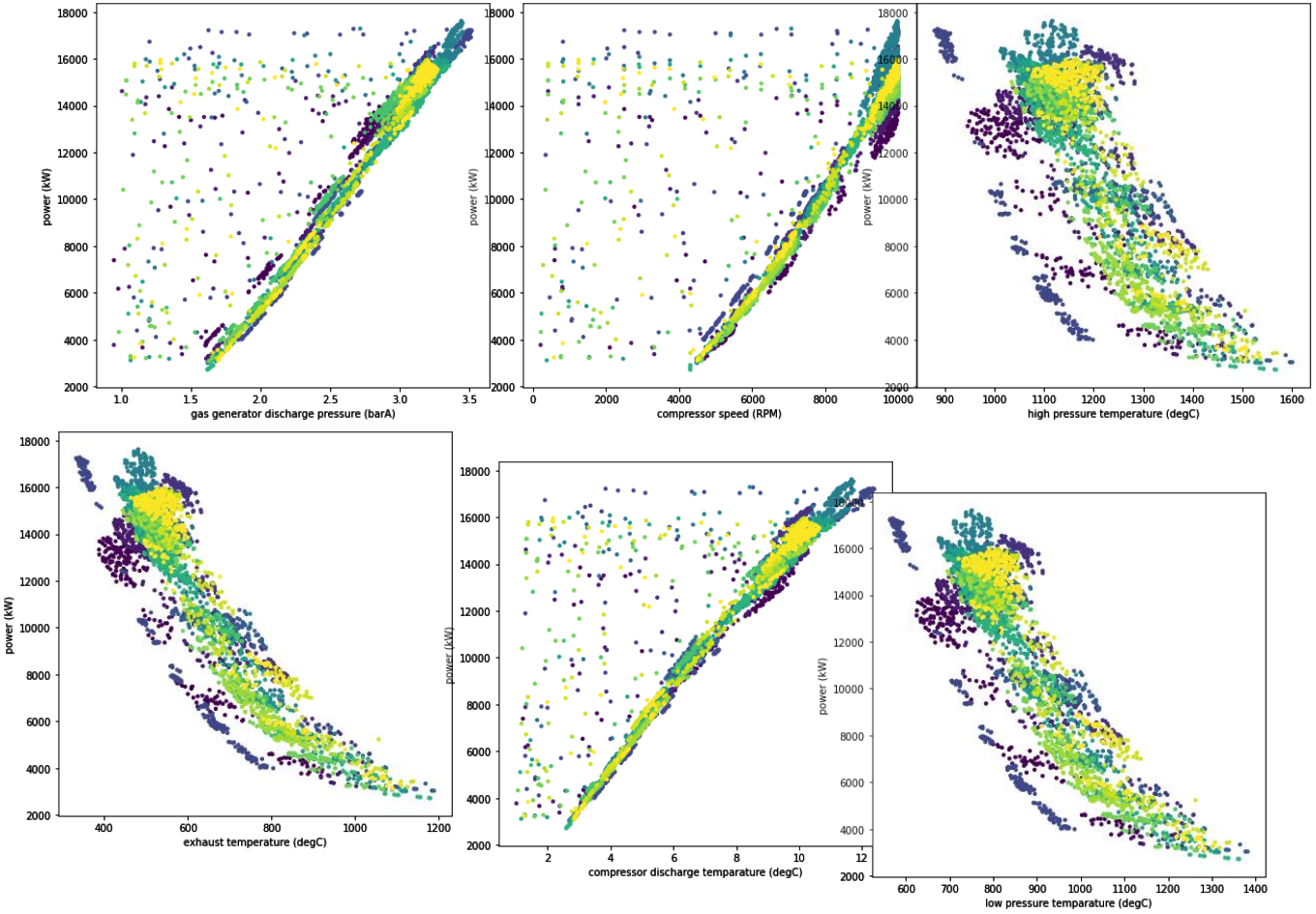
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gas generator discharge pressure (barA)
compressor speed (RPM)
high pressure temperature (degC)
exhaust temperature (degC)
compressor discharge temparature (degC)
low pressure temparature (degC)