

Results

Tedence
Project 2

second phase

New resampling from microseconds to 1 second

New approach: looking for opposite correlation with a lag between
the trend component from seasonal decomposition and the glucos

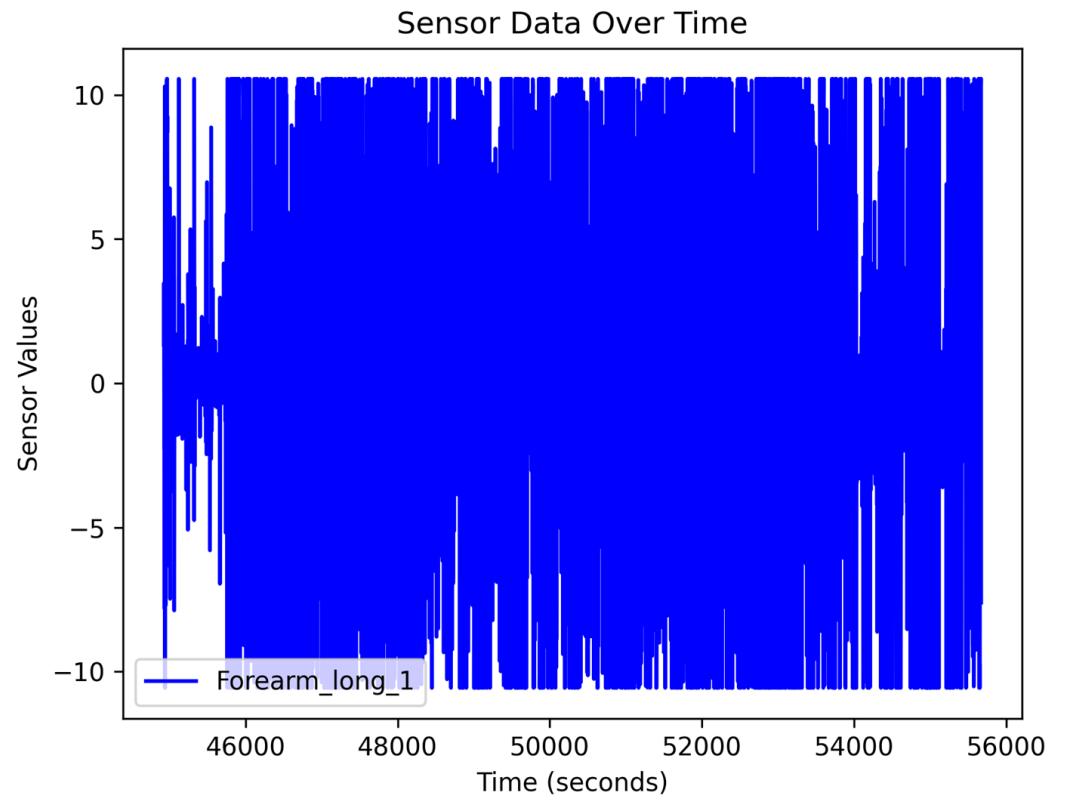
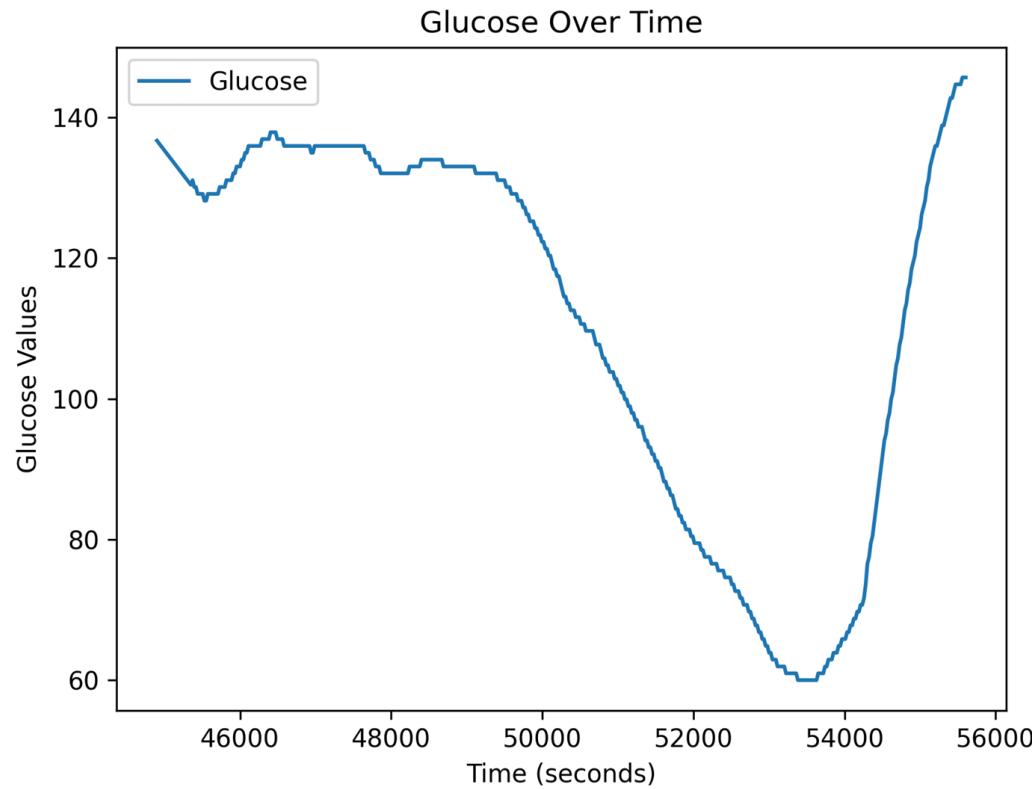
Datasets:

```
PRE_FILE_NAMES = ['07-12-21', '15-12-21', '16-12-21', '17-11-  
21', 'Volunteer']
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0	07-12-21
1	15-12-21
2	16-12-21
3	17-11-21
4	Volunteer

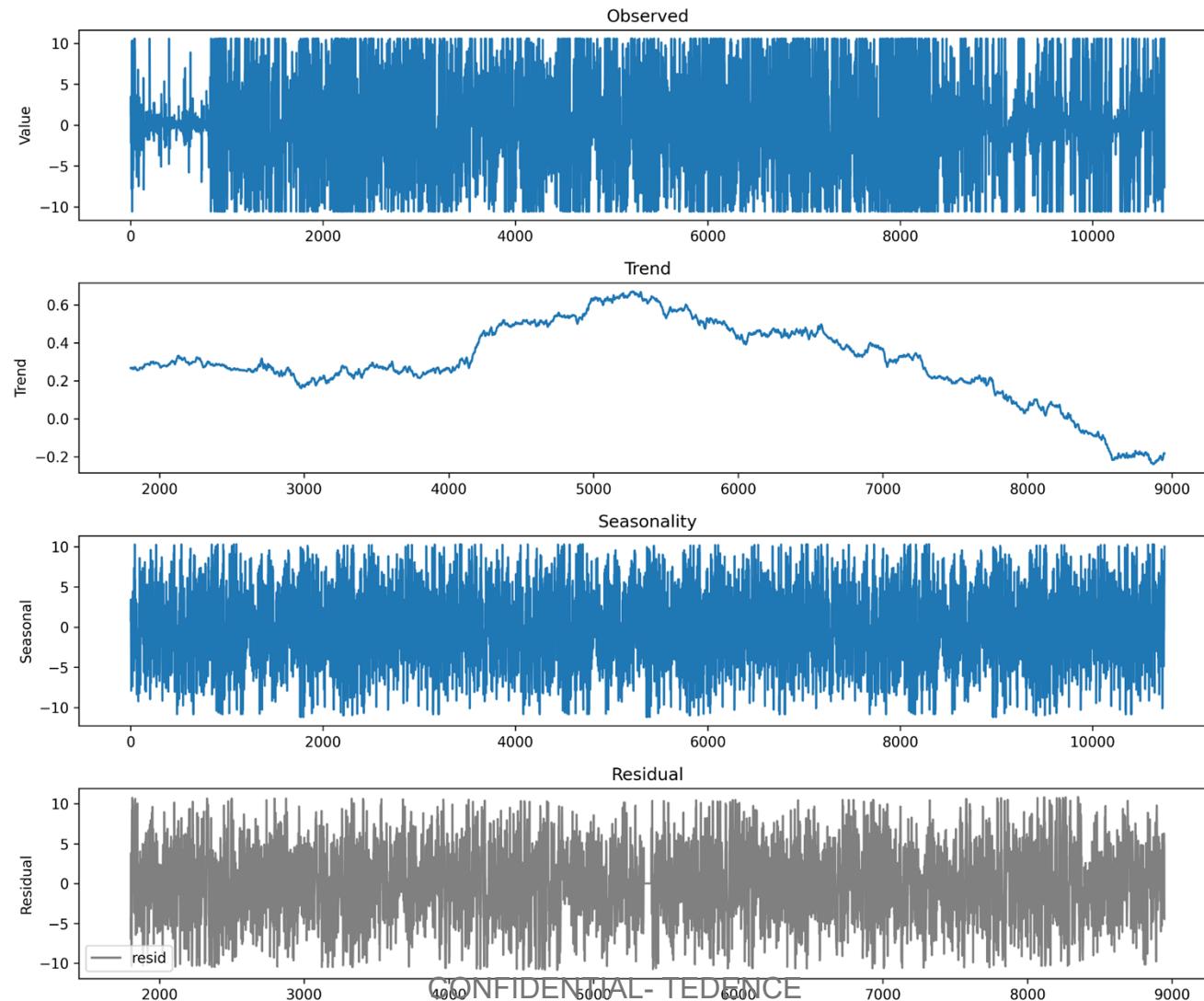
4: Volunteer - Forearm_long_1

Glucose and EMF Sensor



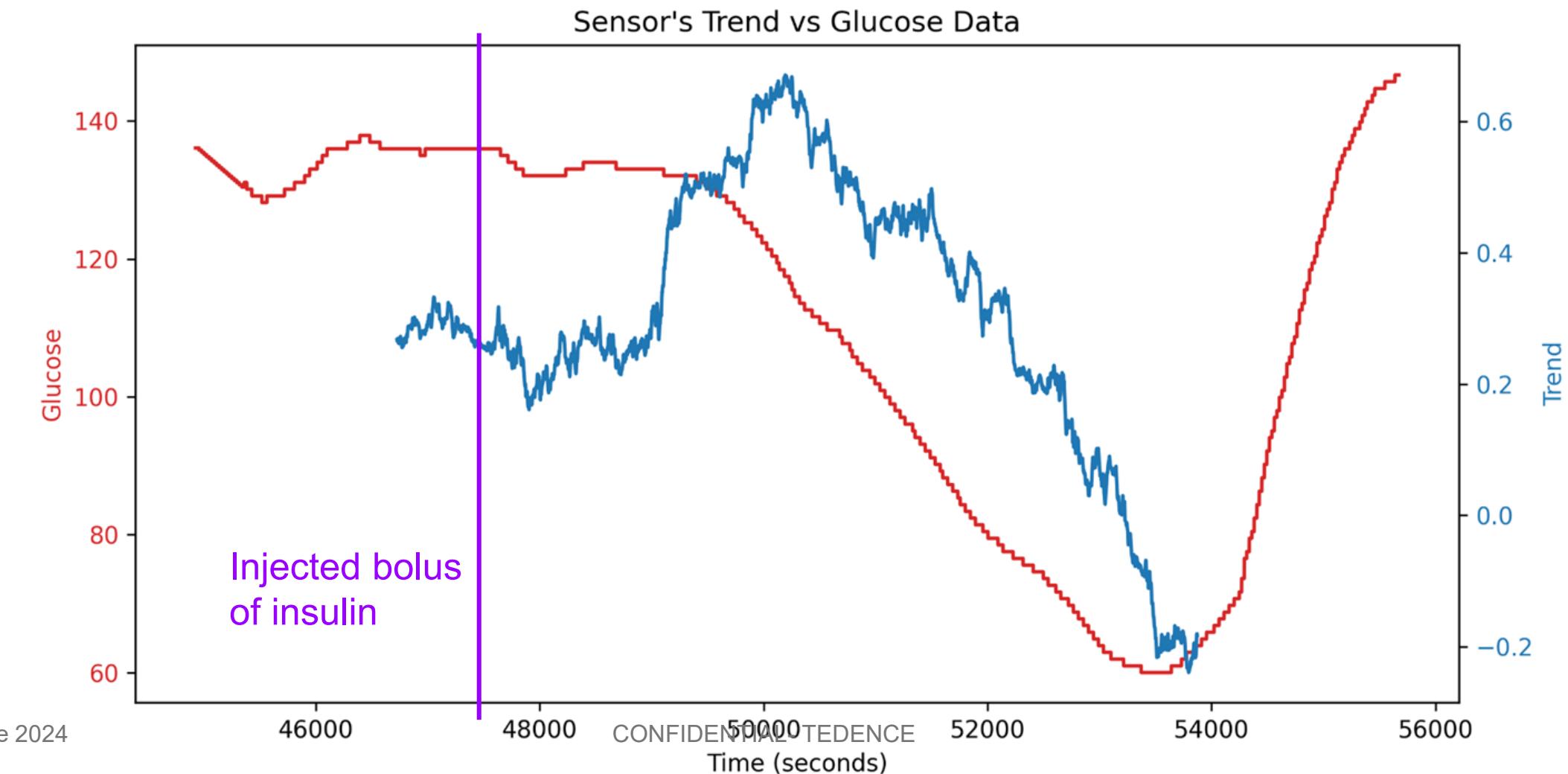
4: Volunteer - Forearm_long_1

Seasonal Decomposition (period 3600)



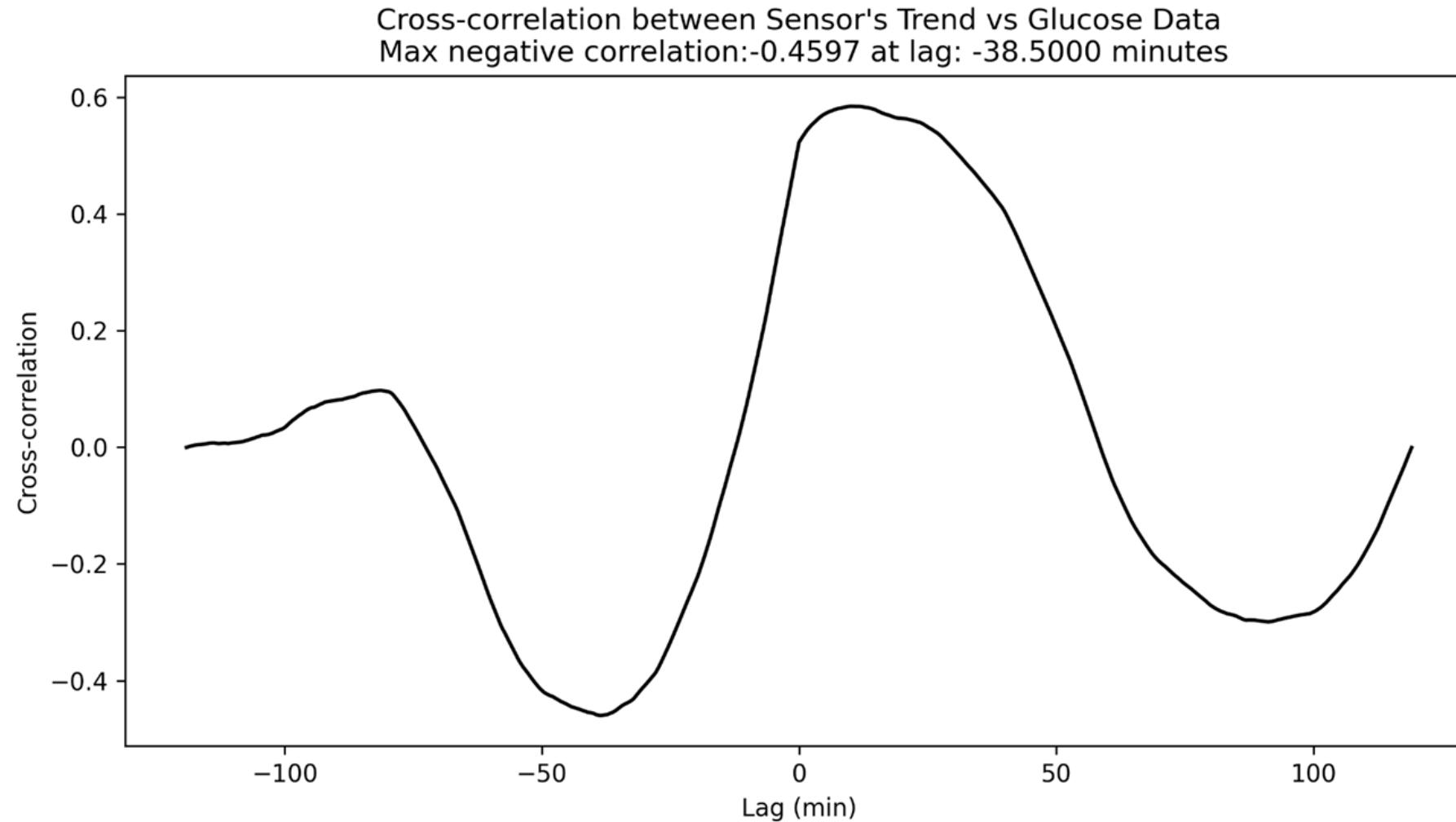
4: Volunteer - Forearm_long_1

Sensor Trend vs Glucose

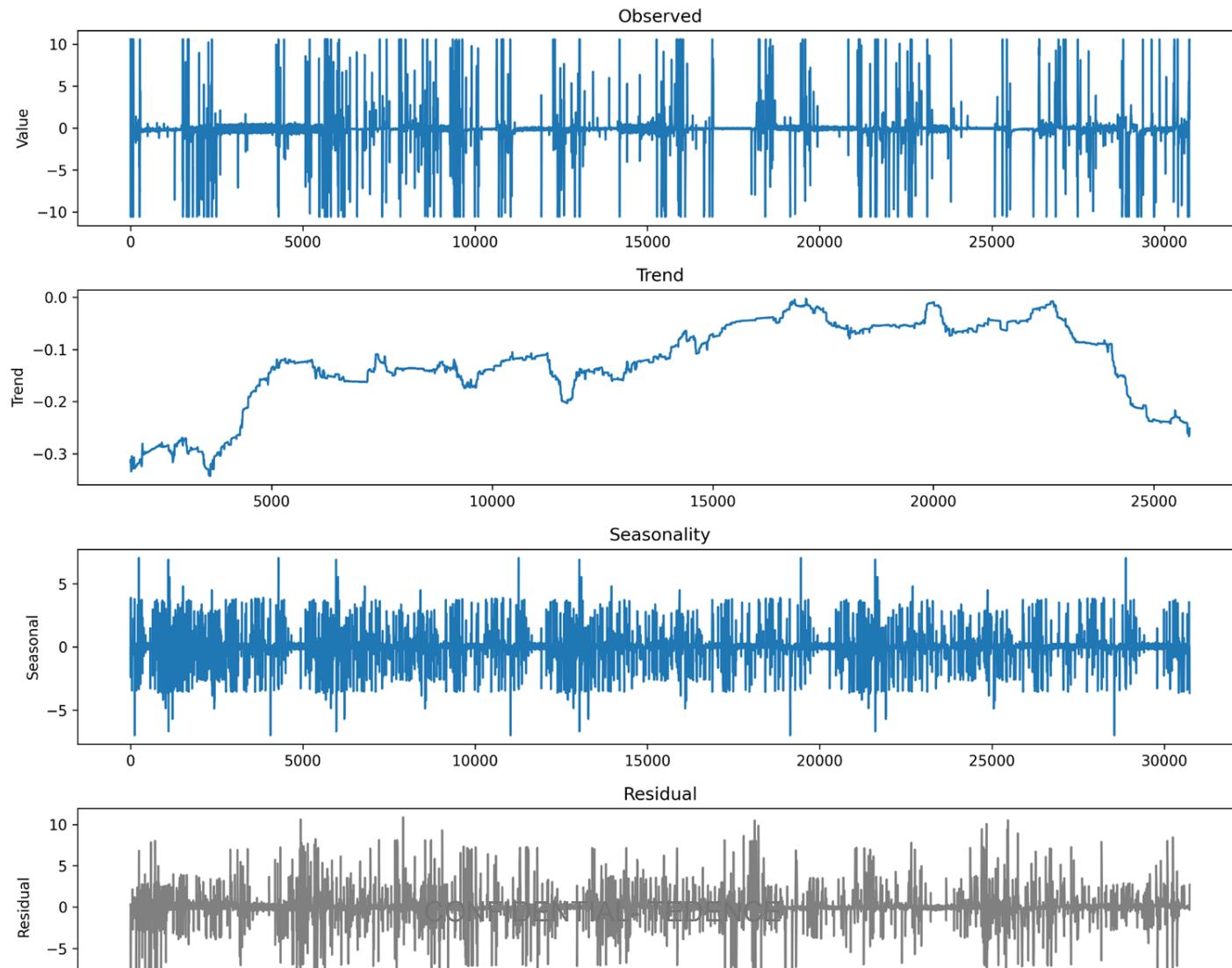


4: Volunteer - Forearm_long_1

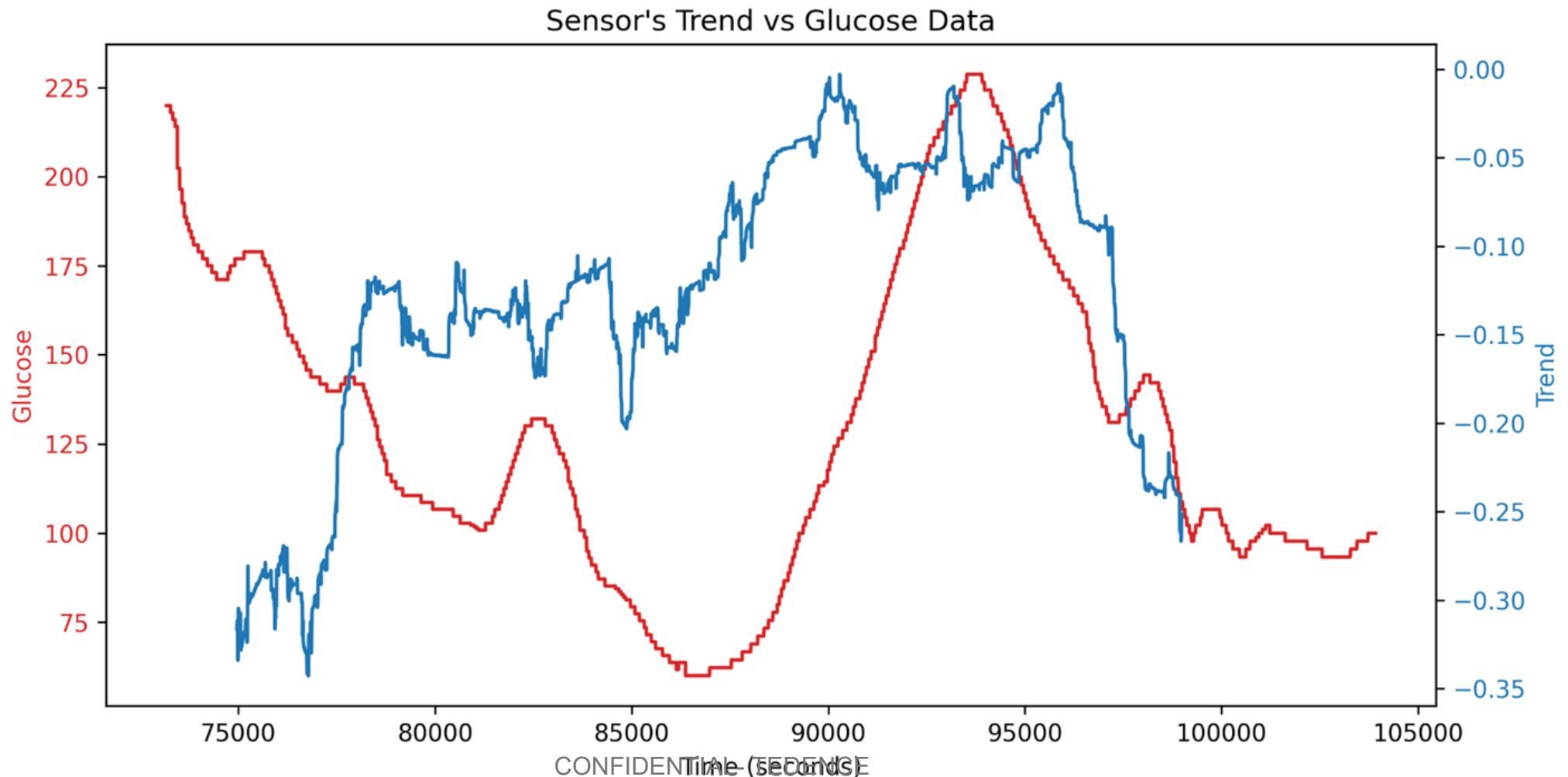
Sensor Trend to Glucose Cross-Correlation



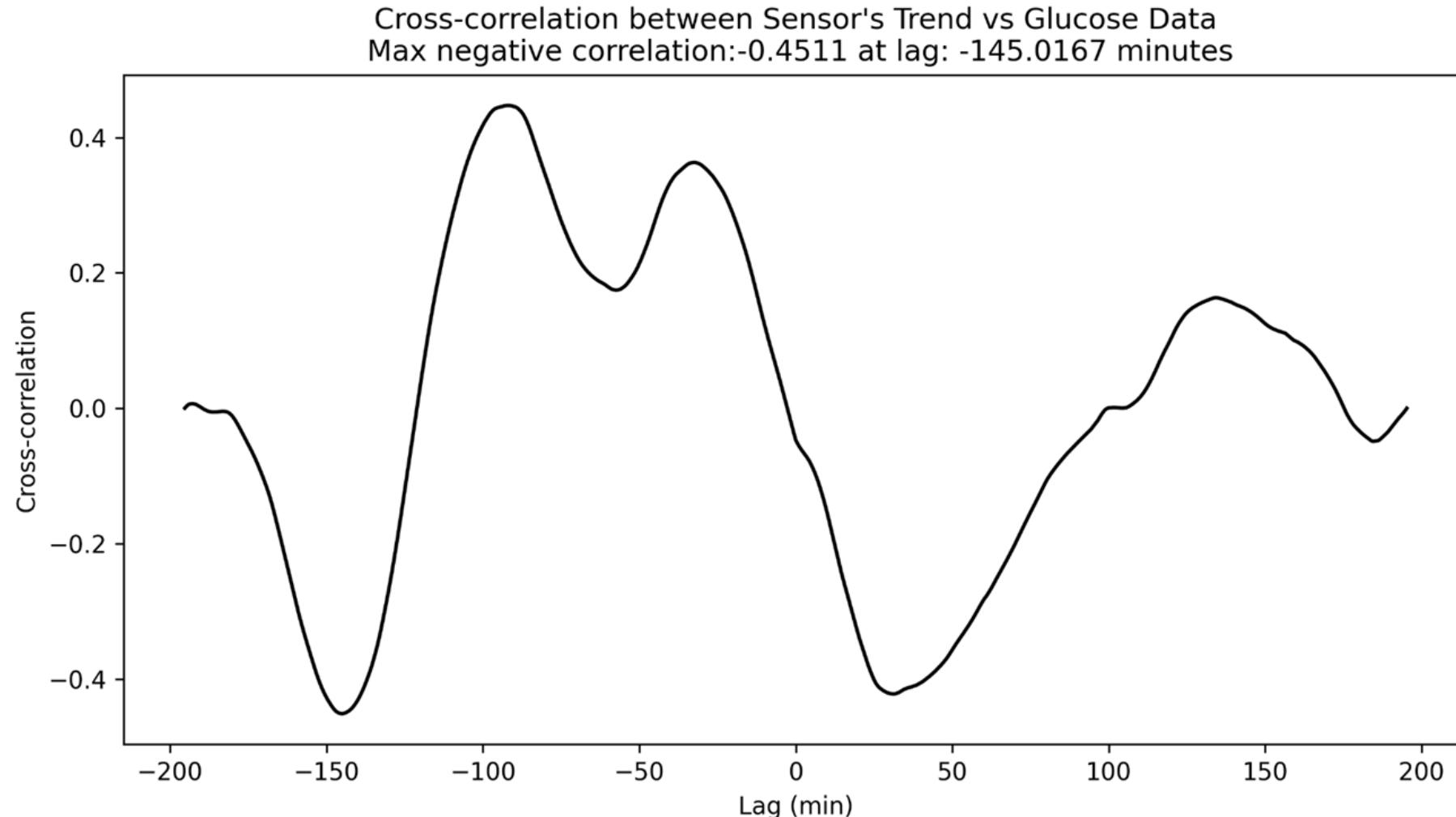
0: 7-12-21- Voltage 0 Seasonal Decomposition



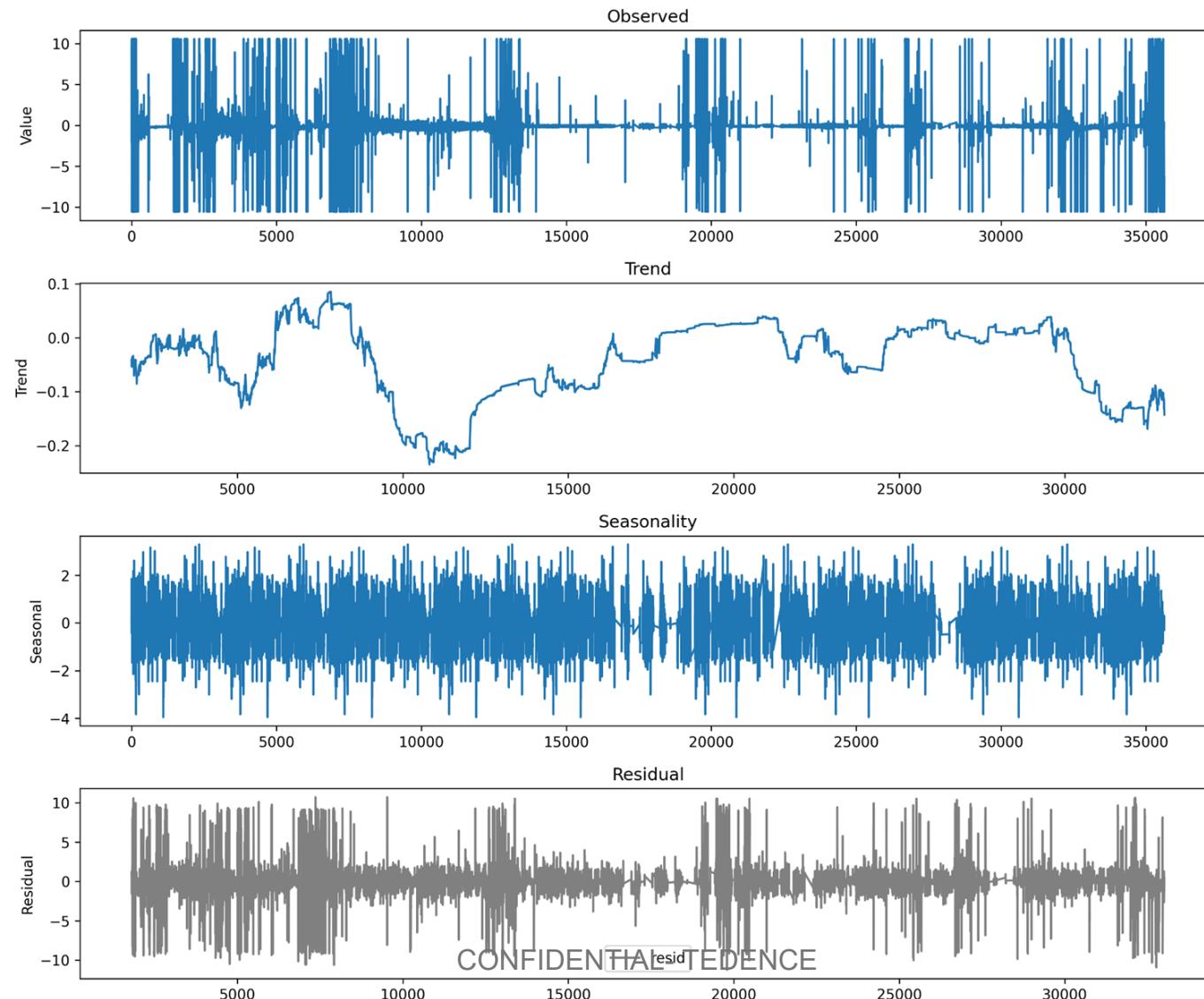
0: 7-12-21- Voltage 0 Sensor Trend vs Glucose



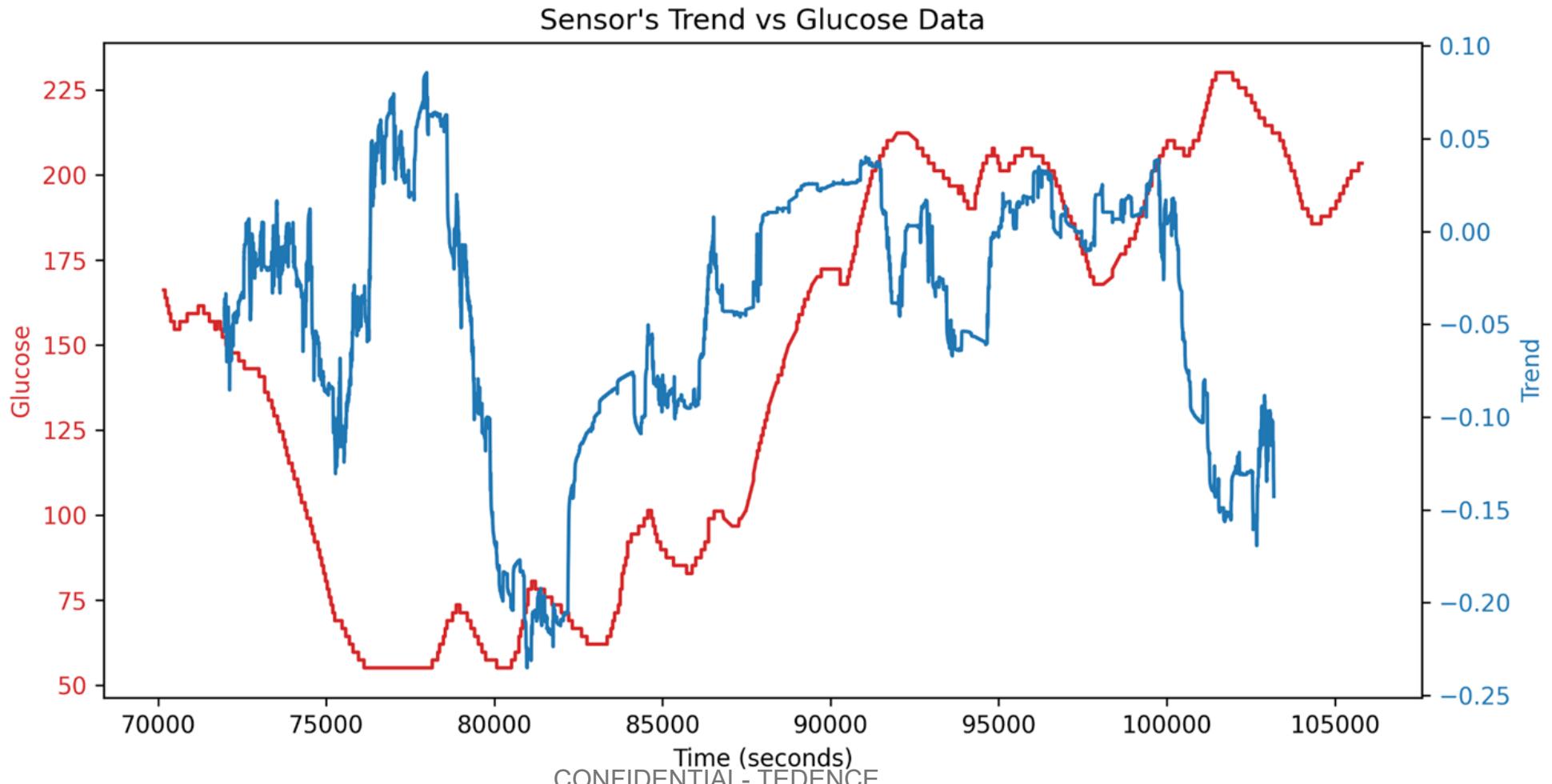
0: 7-12-21- Voltage 0 Sensor Trend to Glucose Cross-Correlation



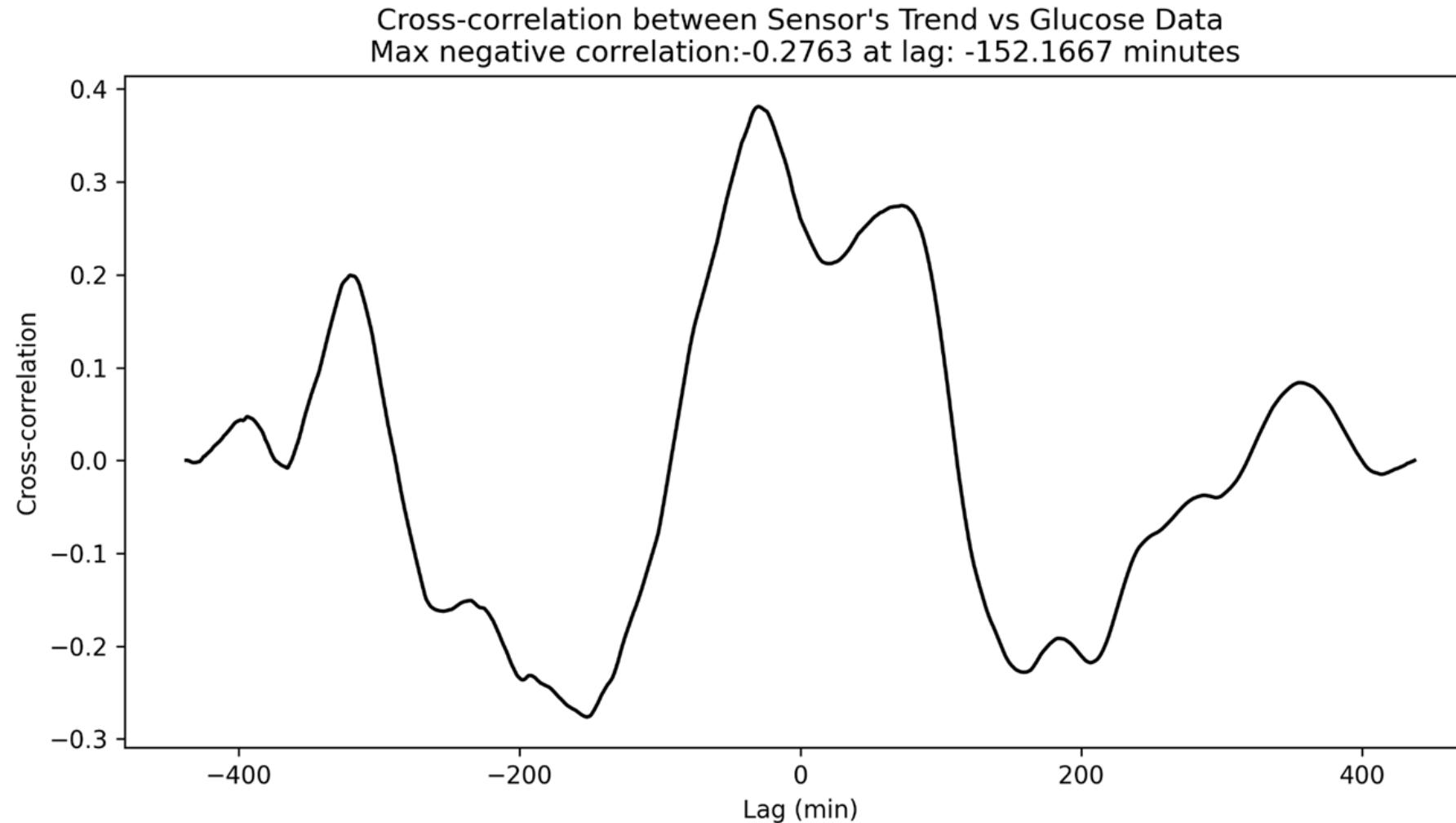
1: 15-12-21- Voltage 0 Seasonal Decomposition



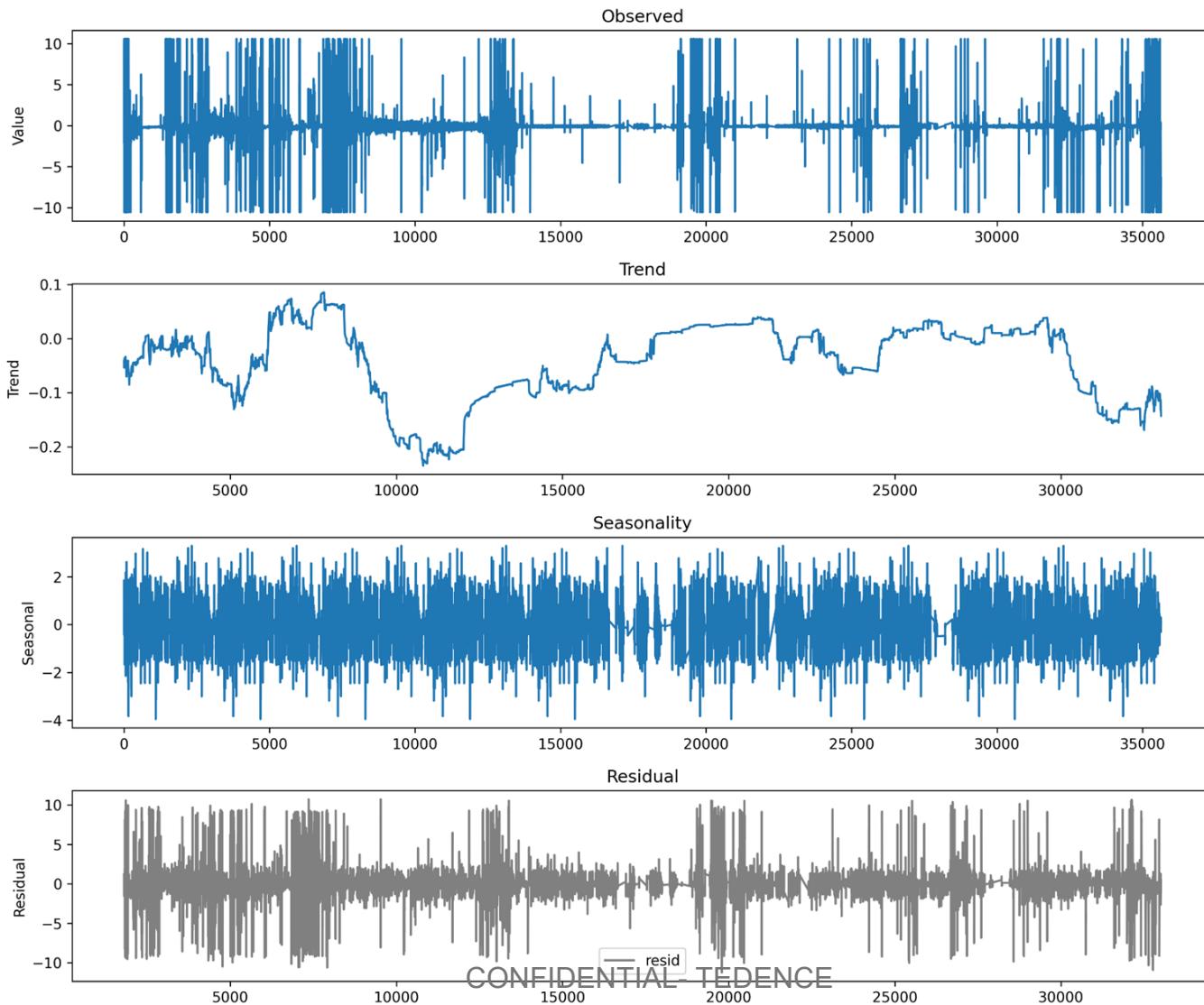
1: 15-12-21- Voltage 0 Sensor Trend vs Glucose



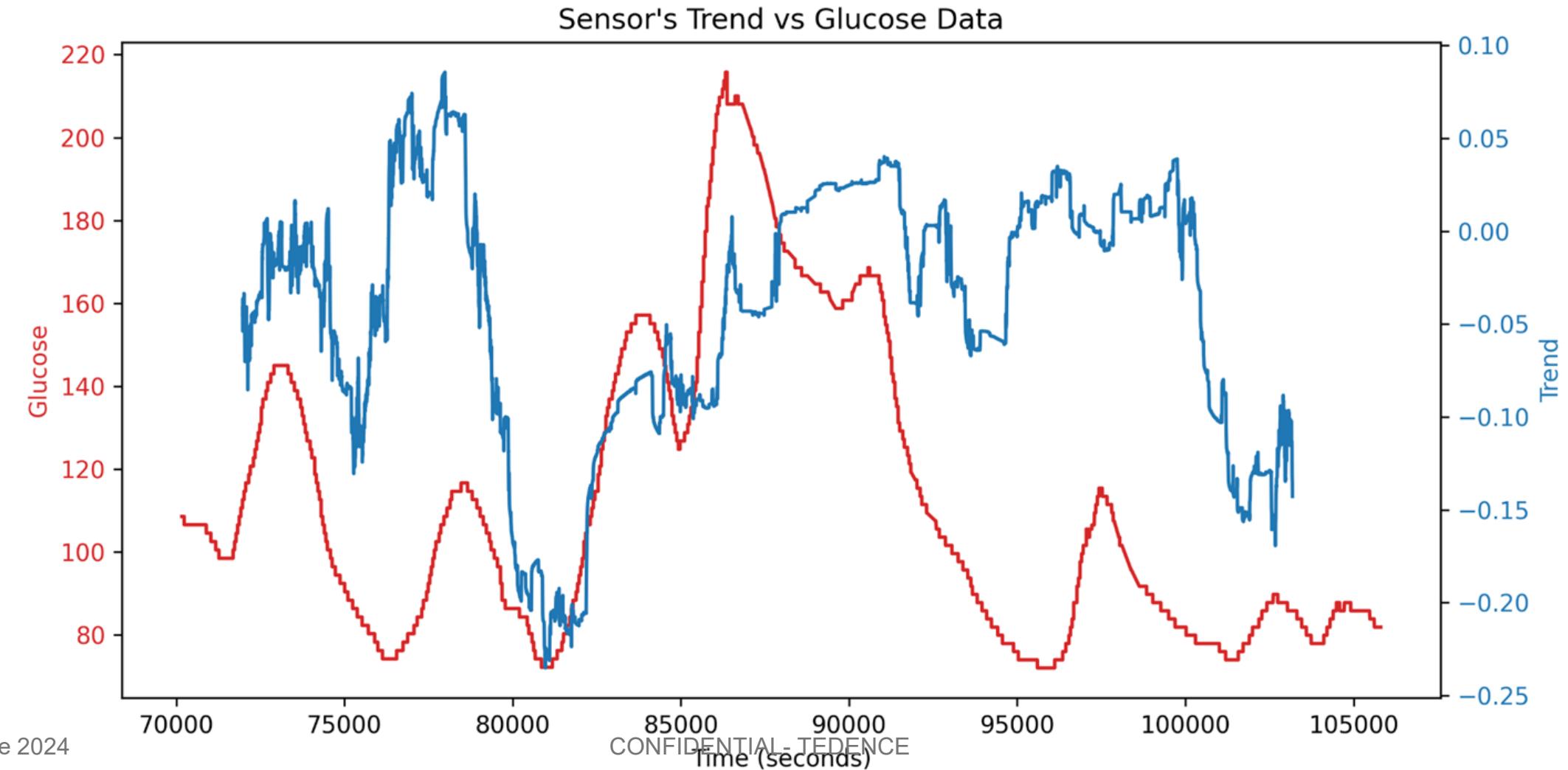
1: 15-12-21- Voltage 0 Sensor Trend to Glucose Cross-Correlation



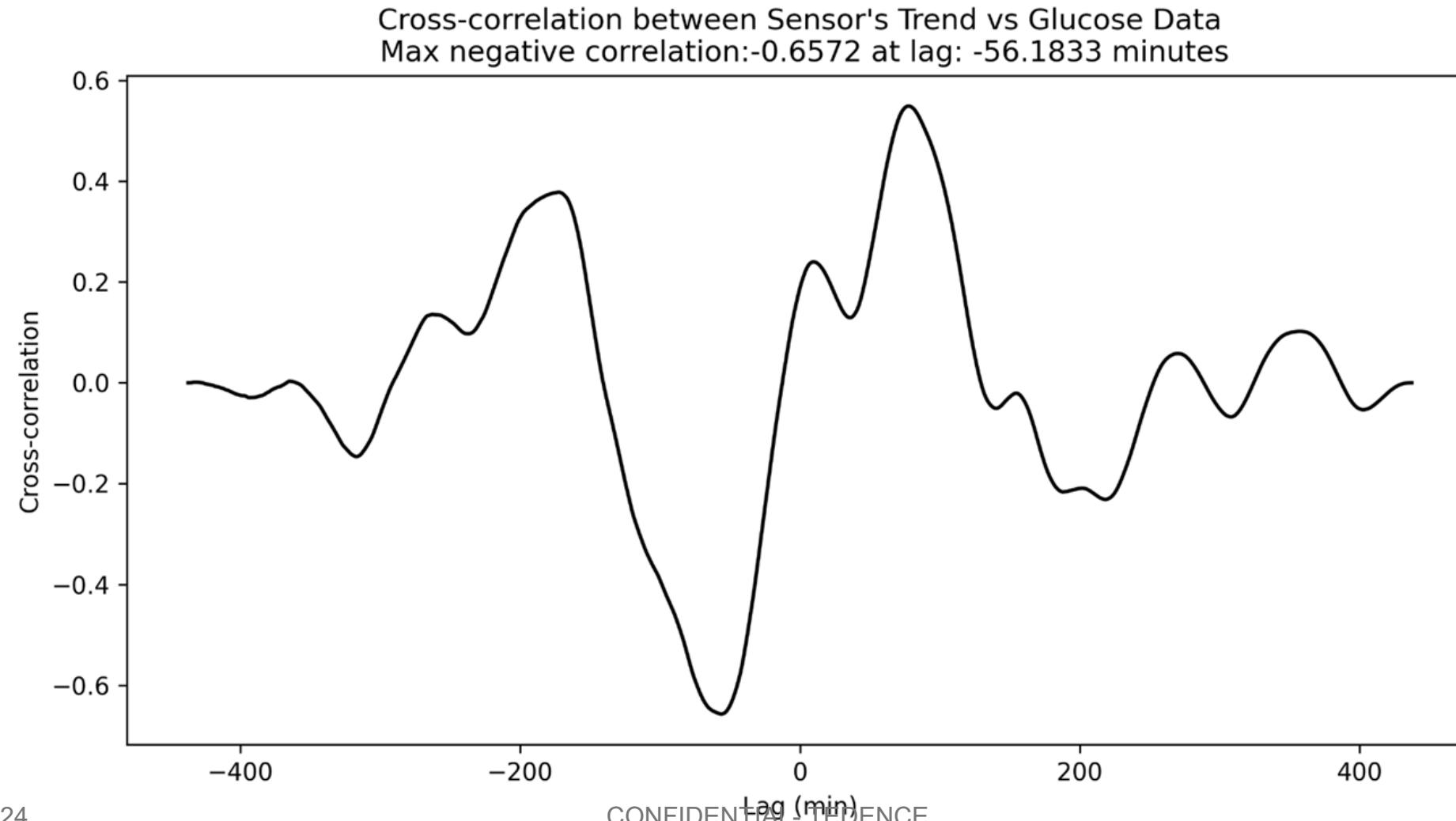
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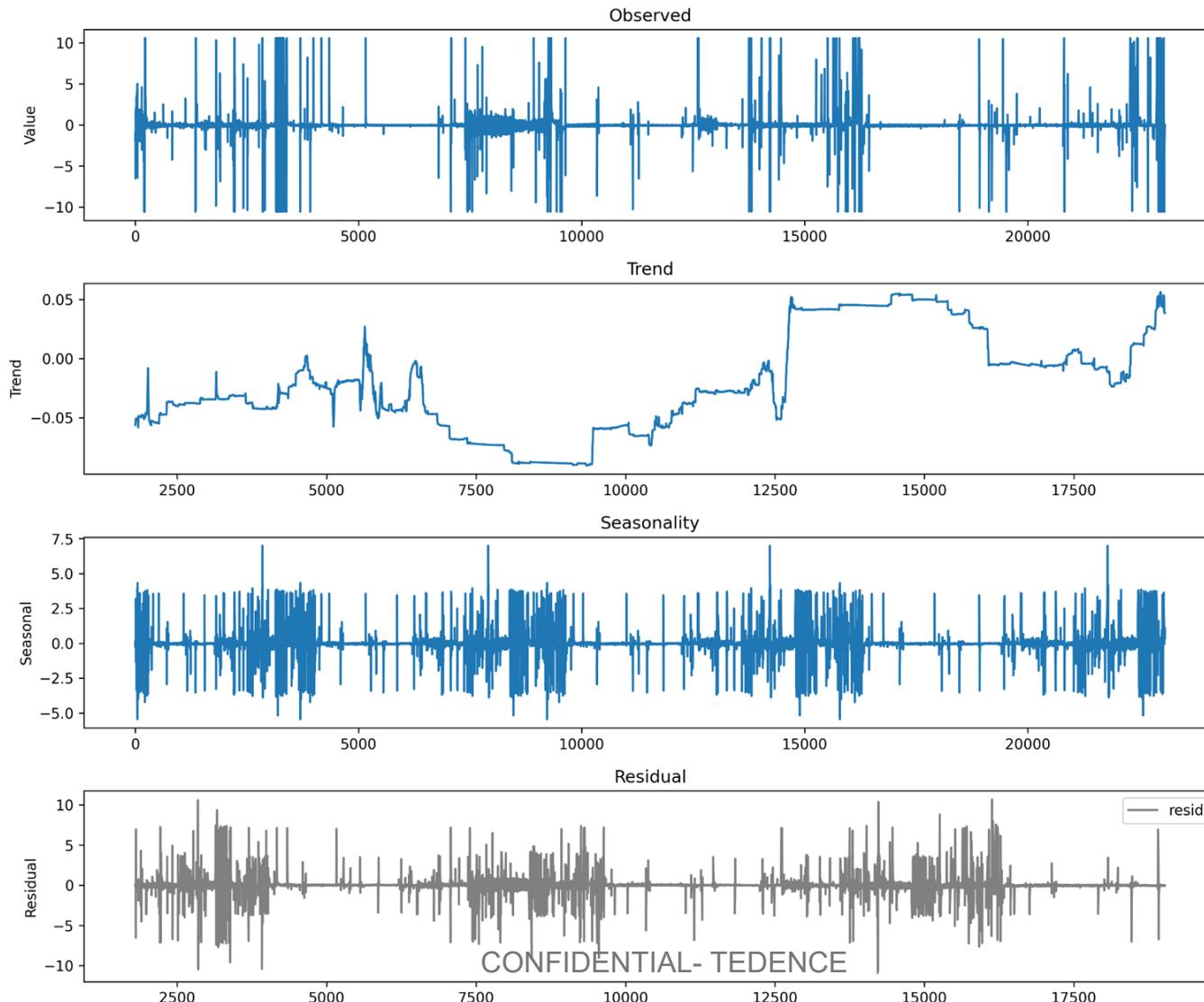
2: 16-12-21- Voltage 0 Sensor Trend vs Glucose



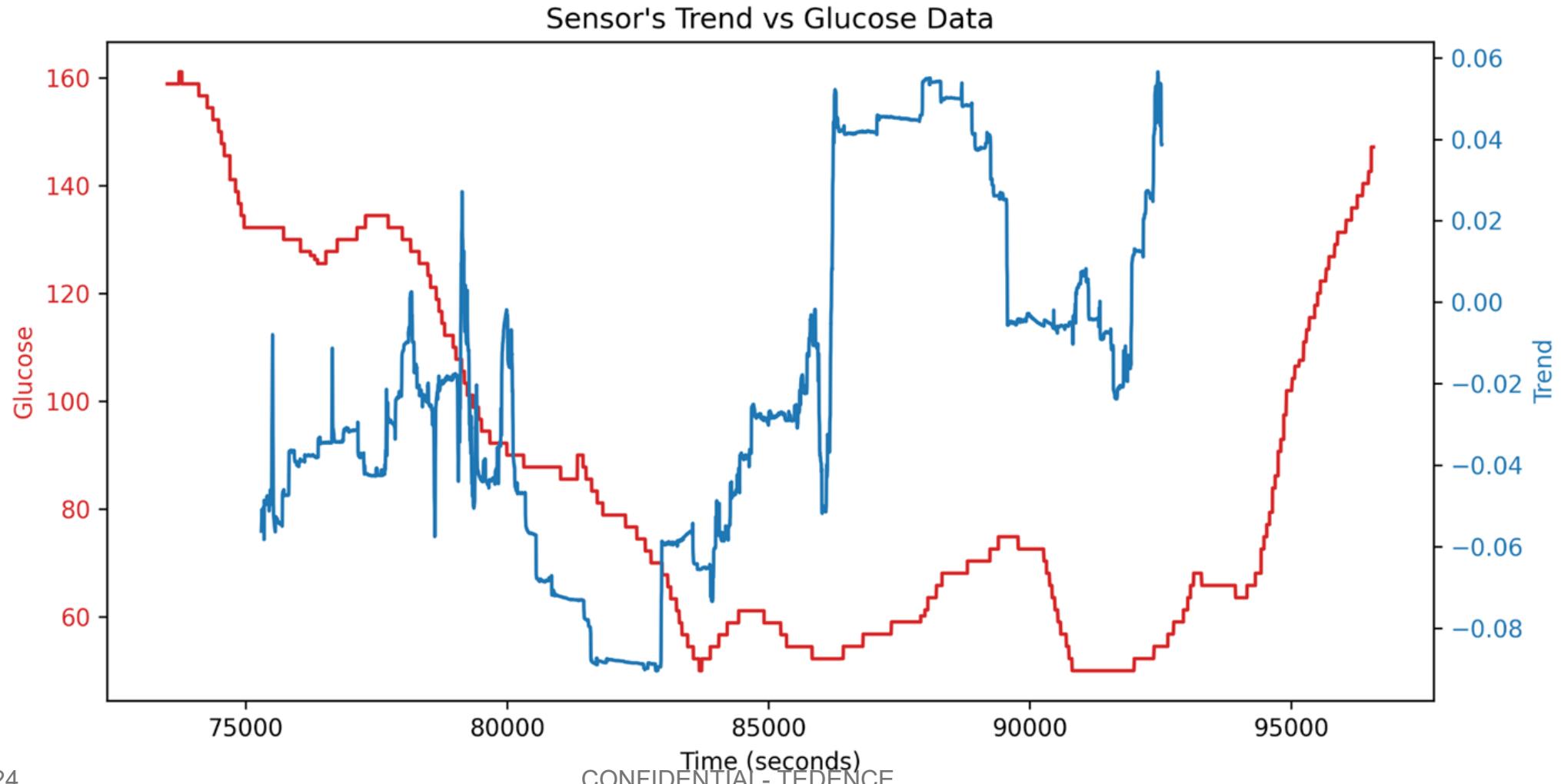
2: 16-12-21- Voltage 0 Sensor Trend to Glucose Cross-Correlation



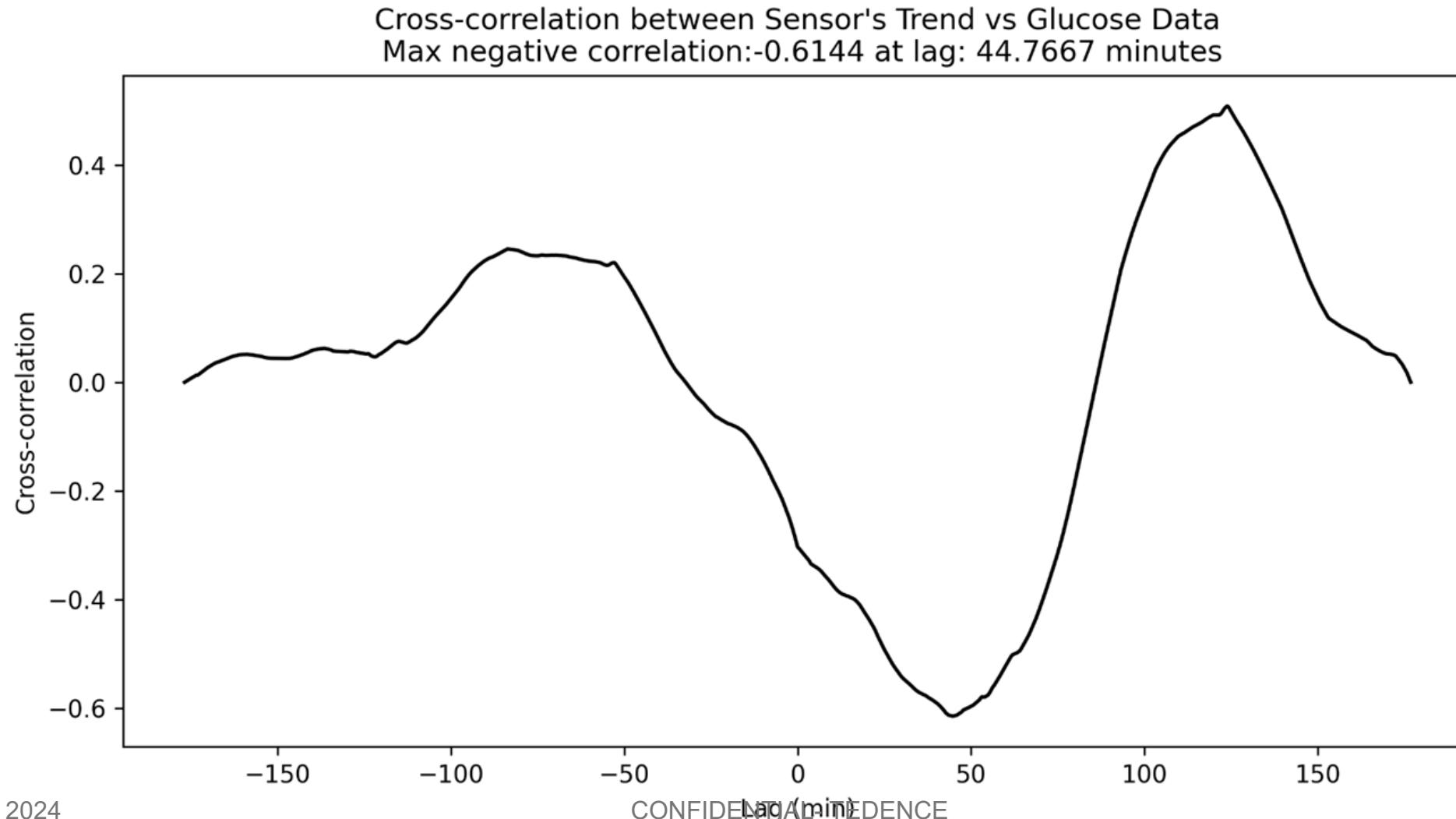
3: 17-11-21- Voltage 0 Seasonal Decomposition



3: 17-11-21- Voltage 0 Sensor Trend vs Glucose



3: 17-11-21- Voltage 0 Sensor Trend to Glucose Cross-Correlation



Cross-Correlation Results Summary

Project	Dataset	Sensor	DC Period	Lag (min)	Max Negative Correlation
2	Volunteer_1	Forearm_long_1	3600	-38.5	-0.4597
		Forearm_long_2	3600	-41	-0.4566
		Forearm_small_1	3600	-75.5	-0.4898
	7-12-21	Voltage_0	3600	-145	-0.4511
		Voltage_1	3600	29	-0.4621
	15-12-21	Voltage_0	3600	-152	-0.2763
		Voltage_1	3600	-119	-0.4191
1	16-12-21	Voltage_0	3600	-56	-0.6572
		Voltage_1	3600	-59	-0.2489
	17-11-21	Voltage_0	3600	45	-0.6144
		Voltage_1	3600	43	-0.6241