

CALMS2 and Picram datasets

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I. OBJECTIVE

- 1) To update the status of CALMS2 and PICRAM datasets.

II. COMPLETED TASKS

A. Datasets

1) *CALMS2*: 336 PPG and 11 ECG records have been uploaded to `bspprojects9\OURR\Calms2`. SQI for the PPG using refined 'delineator.m' and 'calcSQi_PPG_CO.m' has been executed to all first 5000 rows of the data to overview of the quality of the signals. The window size is 10 s. This time, the SQI output given in the score of 0 to 1. The SQI for 2 PPG recording of CALMS2 are shown in Fig. 1 and 2. The black dots represent the peaks of the PPG signal. The Med SQI of PPG for CALMS2 is shown in Fig.3, which is mostly zero. Further investigation will be carried out on the Calms2 PPG dataset.

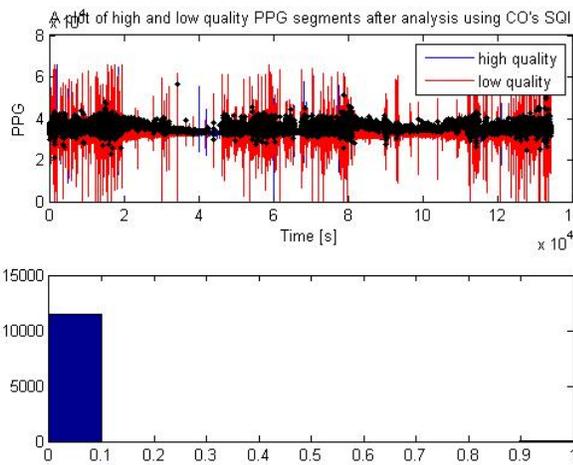


Fig. 1. PPG SGI for pt100 of Calms2

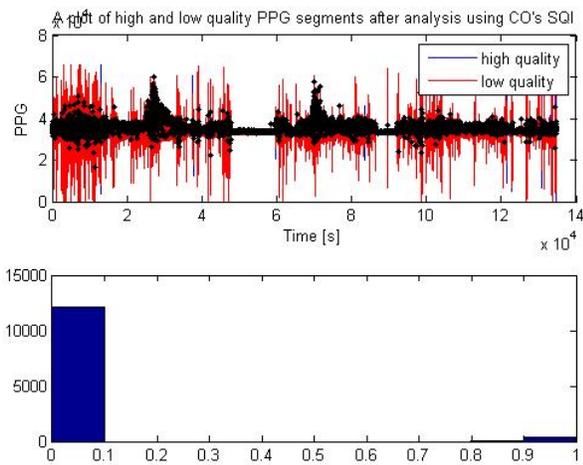


Fig. 2. PPG SGI for pt101 of Calms2

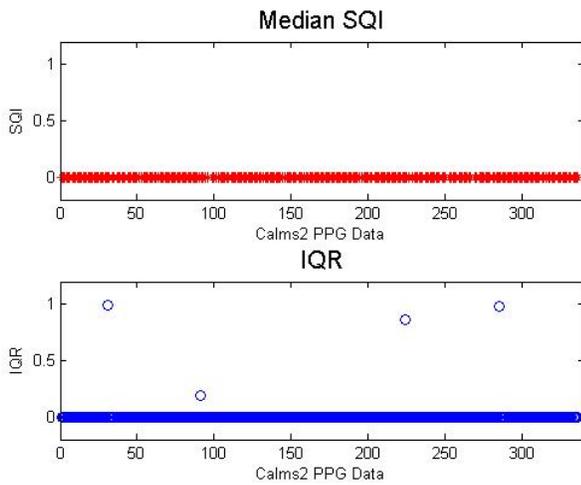


Fig. 3. Overview of SQI of first 5000 rows of PPG data of Calms2

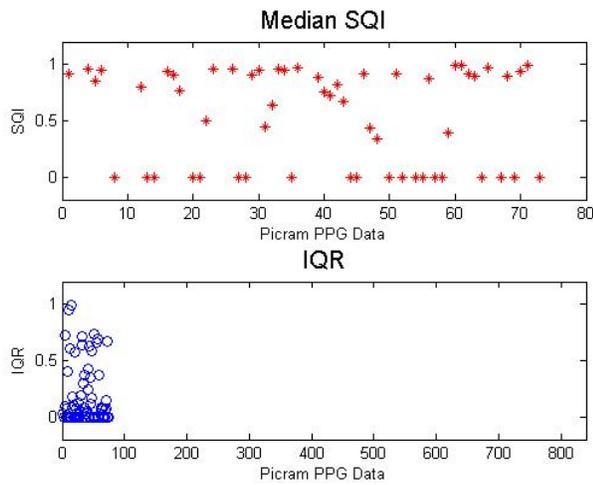


Fig. 4. Overview of SQI of first 5000 rows of PPG data of PICRAM

TABLE I
DATASETS UPDATE

	CALMS2	PICRAM
Formatted/ ↑ bspprojects9	✓	✓ and still running
Raw data	bspprojects5	bspprojects12
ECG Signal	✓ 11 patients	ICU ✗, ward ✓
PPG Signal	✓ 336 patients	ICU ✗, ward ✓
Subject Population	post-surgery	ICU-discharged
Breathing (spontaneous/ ventilated)	s	ICU s,v / ward s,v
No. of records	347	ward (Ox 199, Rb 68)
Neonates (<1 y.o.)	✗	✗
Paediatrics (1-18)	✗	✗
Young Adult (19-40)	✓ (very few)	✓
Adult	✓	✓
Elderly (>70 y.o.)	✓	✓
Unwell?	✓	✓
Chronically Unwell?	✗	✗
Acutely Unwell?	✓	✓
Ambulatory?	ward ✓	✓
Recording Time	1:30 h	ward 1-2 days
Continous RR Signal	IP	✗
Availability	available	available

2) *PICRAM*: In bspprojects9\OURR\Picram, the folders have been divided into Oxford and Reading. For Oxford, there are 'PPG_ECG' and 'PPG_only'. As for 'PPG_ECG', only up to 1,048,576 rows for both PPG and ECG, in total 199, were converted to .mat. 'PPG_only' locates all data of PPG, currently there are 75 out of 199 recordings. For Reading folders, 1,048,576 rows for both PPG and ECG, in total of 68 are located. The all rows (data) for PPG, which will be named 'PPG_only' folder will be done soon. The SQI for 2 PPG recording of Calms2 are shown in Fig. 5 and 6. There is a possibility that the sampling used in this analysis which is 150 Hz is incorrect. This sampling frequency will be verified soon. The overall SQI is shown in Fig.4.

Table I, shows the latest update on the two datasets. The 'Robust estimation of respiratory rate from pulse oximeters' paper has also been reviewed this week. The plan for the upcoming paper on eight datasets will be given in the next report.

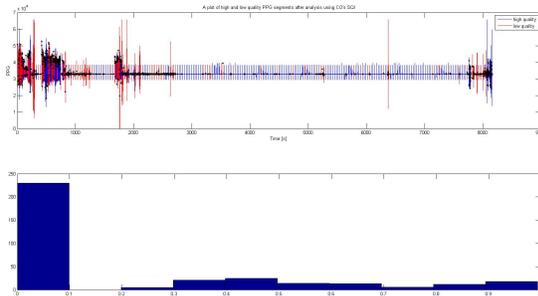


Fig. 5. PPG SQI for patient 007 of Picram

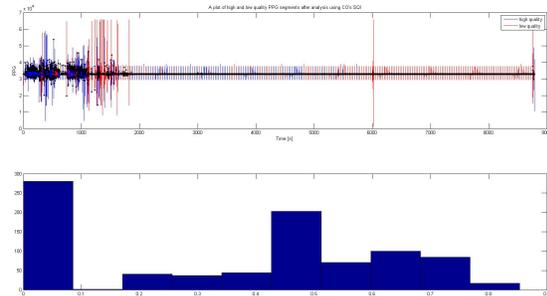


Fig. 6. PPG SQI for patient 008 of Picram

III. CONCLUSION

This week, Calms2 and Picram data have been uploaded. For Picram, the uploading is still running. Evaluation on PPG SQI as was done for the other 6 datasets has been carried out for Picram and Calms2. The methodology of the 'Robust estimation of respiratory rate from pulse oximeters' has been studied.