

Supplementary

Table S1 Hyperparameters of the AdamW optimizer

Parameter	Value
Learning rate	0.001
β_1	0.9
β_2	0.999
ϵ	1×10^{-8}
Weight decay	0.005

Table S2 Participant characteristics

Characteristics	OSA	non-OSA	P value
N	219	81	–
Age (years)	37.63±9.79	41.28±14.96	0.101
Male (M/F)	200/19	68/13	0.066
BMI (kg/m ²)	28.45±4.82	25.27±4.72	<0.001*
AHI (events/h)	48.97±23.84	3.94±3.04	<0.001*

Data are expressed as mean ± standard deviation or median (interquartile range). *, P<0.001. OSA, obstructive sleep apnea; AHI, apnea hypopnea index; BMI, body mass index.

Table S3 Results for different reconstruction and fusion models

Reconstruction method	Fusion method	Precision	Recall	F1-score	AUC
All 18 views	Add	85.47	81.21	82.96	0.882
	Concat	82.58	78.67	80.27	0.868
Skin	Add	78.48	85.31	81.60	0.859
	Concat	75.58	77.39	75.00	0.856
Skeletal	Add	74.47	76.47	75.46	0.829
	Concat	74.60	79.64	77.01	0.802
Airway	Add	74.79	75.68	75.23	0.792
	Concat	75.15	74.29	74.72	0.701

AUC, area under the receiver operating characteristic curve.

Table S4 Times (every 32 volunteers) for prediction of OSA with the different methods (seconds)

Channel	Fusion methods	Time for prediction (s)
6-channels	Add	0.671
	Concat	0.822
18-channels	Add	1.376
	Concat	1.862

OSA, obstructive sleep apnea.