Method	Airplane	Car	Candy	Chicken	Diamond	Duck	Fish	Gemstone	Seahorse	Shell	Starfish	Toffees	Mean
BTF(Raw)	0.730	0.647	0.539	0.789	0.707	**0.691**	0.602	**0.686**	0.596	0.396	0.530	0.703	0.635
BTF(FPFH)	0.520	0.560	0.630	0.432	0.545	0.784	0.549	0.648	**0.779**	**0.754**	0.575	0.462	0.603
M3DM	0.434	0.541	0.552	0.683	0.602	0.433	0.540	0.644	0.495	0.694	0.551	0.450	0.552
PatchCore(FPFH)	**0.882**	0.590	0.541	0.837	0.574	0.546	0.675	0.370	0.505	0.589	0.441	0.565	0.593
PatchCore(PointMAE)	0.726	0.498	0.663	0.827	0.783	0.489	0.630	0.374	0.539	0.501	0.519	0.585	0.594
CPMF	0.701	0.551	0.552	0.504	0.523	0.582	0.558	0.589	0.729	0.653	**0.700**	0.390	0.586
RegAD	0.716	0.697	0.685	**0.852**	0.900	0.584	**0.915**	0.417	0.762	0.583	0.506	**0.827**	0.704
Ours	0.762	**0.711**	**0.755**	0.780	**0.905**	0.517	0.880	0.674	0.604	0.665	0.674	0.774	**0.725**

Table 1. **I-AUROC score for anomaly detection of 12 categories of Real3D-AD**. Bold numbers represent the current highest metrics.

Method	cap0	cap3	helmet3	cup0	bowl4	vase3	headset1	eraser0	vase8	cap4	vase2	vase4	helmet0	bucket1
BTF(Raw)	0.668	0.527	0.526	0.403	0.664	**0.717**	0.515	0.525	0.424	0.468	0.410	0.425	0.553	0.321
BTF(FPFH)	0.618	0.522	0.444	0.586	0.609	0.699	0.490	**0.719**	**0.668**	0.520	0.546	0.510	0.571	0.633
M3DM	0.557	0.423	0.374	0.539	0.464	0.439	0.617	0.627	0.663	**0.777**	0.737	0.476	0.526	0.501
Patchcore(FPFH)	0.580	0.453	0.404	0.600	0.494	0.449	0.637	0.657	0.662	0.757	0.721	0.506	0.546	0.551
Patchcore(PointMAE)	0.589	0.476	0.424	0.610	0.501	0.460	0.627	0.677	0.663	0.727	**0.741**	0.516	0.556	0.561
CPMF	0.601	0.551	0.520	0.497	**0.683**	0.582	0.458	0.689	0.529	0.553	0.582	0.514	0.555	0.601
RegAD	0.693	0.725	0.367	0.510	0.663	0.650	0.610	0.343	0.620	0.643	0.605	0.500	**0.600**	0.752
Ours	**0.737**	**0.775**	**0.573**	**0.643**	0.676	0.700	0.676	0.548	0.630	0.652	0.614	**0.524**	0.597	**0.771**

Method	bottle3	vase0	bottle0	tap1	bowl0	bucket0	vase5	vase1	vase9	ashtray0	bottle1	tap0	phone	cup1
BTF(Raw)	0.568	0.531	0.597	0.573	0.564	**0.617**	0.585	0.549	0.564	0.578	0.510	0.525	0.563	0.521
BTF(FPFH)	0.322	0.342	0.344	0.546	0.509	0.401	0.409	0.219	0.268	0.420	0.546	0.560	0.671	0.610
M3DM	0.541	0.423	0.574	0.739	0.634	0.309	0.317	0.427	**0.663**	0.577	0.637	**0.754**	0.357	0.556
Patchcore(FPFH)	0.572	0.455	**0.604**	**0.766**	0.504	0.469	0.417	0.423	0.660	0.587	0.667	0.753	0.388	0.586
Patchcore(PointMAE)	**0.650**	0.447	0.513	0.538	0.523	0.593	0.579	0.552	0.629	0.591	0.601	0.458	0.488	0.556
CPMF	0.405	0.451	0.520	0.697	**0.783**	0.482	0.618	0.345	0.609	0.353	0.482	0.359	0.509	0.499
RegAD	0.525	0.533	0.486	0.641	0.671	0.610	0.520	0.702	0.594	0.597	0.695	0.676	0.414	0.538
Ours	0.640	**0.533**	**0.552**	0.696	0.681	0.580	**0.676**	**0.757**	0.594	**0.671**	**0.700**	0.676	**0.755**	**0.757**

Method	vase7	helmet2	cap5	shelf0	bowl5	bowl3	helmet1	bowl1	headset0	bag0	bowl2	jar	**Mean**
BTF(Raw)	0.448	0.602	0.373	0.164	0.417	0.385	0.349	0.264	0.378	0.410	0.525	0.420	0.493
BTF(FPFH)	0.518	0.542	0.586	0.609	0.699	0.490	**0.719**	0.668	0.520	0.546	0.510	0.424	0.528
M3DM	0.657	0.623	0.639	0.564	0.409	0.617	0.427	0.663	0.577	0.537	0.684	0.441	0.552
Patchcore(FPFH)	**0.693**	0.425	**0.790**	0.494	0.558	0.537	0.484	0.639	0.583	0.571	0.615	0.472	0.568
Patchcore(PointMAE)	0.650	0.447	0.538	0.523	0.593	0.579	0.552	0.629	0.591	0.601	0.458	0.483	0.562
CPMF	0.397	0.462	0.697	0.685	0.685	**0.658**	0.589	0.639	0.643	0.643	0.625	0.610	0.559
RegAD	0.462	0.614	0.467	**0.688**	0.593	0.348	0.381	0.525	0.537	**0.706**	0.490	0.592	0.572
Ours	0.635	**0.641**	0.652	0.603	**0.710**	0.599	0.600	**0.702**	**0.720**	0.660	**0.685**	**0.780**	**0.661**

Table 2. **I-AUROC score for anomaly detection of 40 categories of our Anomaly-ShapeNet dataset**.

Method	cap0	cap3	helmet3	cup0	bowl4	vase3	headset1	eraser0	vase8	cap4	vase2	vase4	helmet0	bucket1
BTF(Raw)	0.524	0.687	0.700	0.632	0.563	0.602	0.475	0.637	0.550	0.469	0.403	0.613	0.504	0.686
BTF(FPFH)	0.730	0.658	0.724	0.790	0.679	0.699	0.591	0.719	0.662	0.524	0.646	0.710	0.575	0.633
M3DM	0.531	0.605	0.655	0.715	0.624	0.658	0.585	0.710	0.551	0.718	0.737	0.655	0.599	0.699
Patchcore(FPFH)	0.472	0.653	0.737	0.655	0.720	0.430	0.464	0.810	0.575	0.595	0.721	0.505	0.548	0.571
Patchcore(PointMAE)	0.544	0.488	0.615	0.510	0.501	0.465	0.423	0.378	0.364	0.725	0.742	0.523	0.580	0.574
CPMF	0.601	0.551	0.520	0.497	0.683	0.582	0.458	0.689	0.529	0.553	0.582	0.514	0.555	0.601
RegAD	0.632	0.718	0.620	0.685	0.800	0.511	0.626	0.755	0.811	0.815	0.405	0.755	0.600	0.752
Ours	0.715	0.706	0.663	0.643	0.576	0.401	0.476	0.548	0.635	0.753	0.614	0.524	0.598	0.774

Method	bottle3	vase0	bottle0	tap1	bowl0	bucket0	vase5	vase1	vase9	ashtray0	bottle1	tap0	phone	cup1
BTF(Raw)	0.720	0.618	0.551	0.564	0.524	0.617	0.585	0.549	0.564	0.512	0.491	0.527	0.583	0.561
BTF(FPFH)	0.622	0.642	0.641	0.596	0.710	0.401	0.429	0.619	0.568	0.624	0.549	0.568	0.675	0.619
M3DM	0.532	0.608	0.663	0.712	0.658	0.698	0.642	0.602	0.663	0.577	0.637	0.654	0.358	0.556
Patchcore(FPFH)	0.512	0.655	0.654	0.768	0.524	0.459	0.447	0.453	0.663	0.597	0.687	0.733	0.488	0.596
Patchcore(PointMAE)	0.653	0.677	0.553	0.541	0.527	0.586	0.572	0.551	0.423	0.495	0.606	0.858	0.886	0.856
CPMF	0.435	0.458	0.521	0.657	0.745	0.486	0.651	0.486	0.545	0.615	0.571	0.458	0.545	0.509
RegAD	0.525	0.548	0.886	0.741	0.775	0.619	0.624	0.602	0.694	0.698	0.696	0.589	0.599	0.698
Ours	0.641	0.535	0.556	0.699	0.781	0.585	0.682	0.685	0.691	0.671	0.702	0.681	0.742	0.688

Method	vase7	helmet2	cap5	shelf0	bowl5	bowl3	helmet1	bowl1	headset0	bag0	bowl2	jar	**Mean**
BTF(Raw)	0.578	0.605	0.373	0.464	0.517	0.685	0.449	0.464	0.578	0.430	0.426	0.423	0.550
BTF(FPFH)	0.540	0.643	0.586	0.619	0.699	0.590	0.749	0.768	0.620	0.746	0.518	0.427	0.628
M3DM	0.517	0.623	0.655	0.554	0.489	0.657	0.427	0.663	0.581	0.637	0.694	0.541	0.616
Patchcore(FPFH)	0.693	0.455	0.795	0.613	0.358	0.327	0.489	0.531	0.583	0.574	0.625	0.478	0.580
Patchcore(PointMAE)	0.651	0.651	0.545	0.543	0.562	0.581	0.562	0.524	0.575	0.674	0.515	0.487	0.577
CPMF	0.504	0.515	0.551	0.783	0.684	0.641	0.542	0.488	0.699	0.655	0.635	0.611	0.573
RegAD	0.881	0.825	0.467	0.688	0.691	0.654	0.624	0.615	0.580	0.715	0.593	0.599	0.668
Ours	0.593	0.644	0.742	0.605	0.715	0.599	0.604	0.705	0.705	0.668	0.684	0.765	0.650

Table 3. **P-AUROC score for anomaly detection of 40 categories of our Anomaly-ShapeNet dataset**

Method	cap0	cap3	helmet3	cup0	bowl4	vase3	headset1	eraser0	vase8	cap4	vase2	vase4	helmet0	bucket1
BTF(Raw)	0.659	0.612	0.526	0.601	0.601	0.717	0.515	0.425	0.416	0.515	0.413	0.428	0.559	0.620
BTF(FPFH)	0.618	0.579	0.564	0.585	0.632	0.652	0.523	0.719	0.624	0.545	0.569	0.587	0.568	0.648
M3DM	0.564	0.652	0.458	0.570	0.571	0.551	0.623	0.625	0.463	0.477	0.615	0.526	0.528	0.507
Patchcore(FPFH)	0.585	0.457	0.494	0.604	0.575	0.481	0.601	0.584	0.515	0.655	0.801	0.777	0.525	0.565
Patchcore(PointMAE)	0.561	0.583	0.611	0.642	0.601	0.455	0.423	0.801	0.655	0.721	0.711	0.586	0.633	0.642
CPMF	0.601	0.541	0.645	0.647	0.683	0.588	0.619	0.544	0.673	0.645	0.632	0.655	0.333	0.501
RegAD	0.693	0.711	0.468	0.531	0.624	0.651	0.617	0.424	0.629	0.623	0.641	0.505	0.600	0.714
Ours	0.711	0.702	0.575	0.455	0.630	0.708	0.656	0.599	0.639	0.658	0.655	0.528	0.697	0.732

Method	bottle3	vase0	bottle0	tap1	bowl0	bucket0	vase5	vase1	vase9	ashtray0	bottle1	tap0	phone	cup1
BTF(Raw)	0.543	0.562	0.466	0.594	0.588	0.652	0.615	0.441	0.482	0.578	0.573	0.535	0.613	0.701
BTF(FPFH)	0.602	0.641	0.644	0.575	0.576	0.483	0.472	0.655	0.638	0.651	0.625	0.610	0.662	0.651
M3DM	0.451	0.788	0.763	0.638	0.525	0.609	0.633	0.652	0.651	0.632	0.674	0.722	0.464	0.752
Patchcore(FPFH)	0.579	0.645	0.615	0.684	0.548	0.604	0.515	0.623	0.660	0.445	0.677	0.712	0.332	0.586
Patchcore(PointMAE)	0.651	0.548	0.545	0.542	0.562	0.541	0.585	0.572	0.634	0.679	0.645	0.712	0.652	0.710
CPMF	0.505	0.632	0.588	0.697	0.775	0.662	0.518	0.645	0.618	0.453	0.592	0.639	0.655	0.609
RegAD	0.474	0.615	0.632	0.599	0.494	0.632	0.588	0.468	0.574	0.588	0.695	0.676	0.614	0.638
Ours	0.648	0.573	0.558	0.796	0.481	0.578	0.654	0.725	0.462	0.612	0.702	0.401	0.552	0.627

Method	vase7	helmet2	cap5	shelf0	bowl5	bowl3	helmet1	bowl1	headset0	bag0	bowl2	jar	**Mean**
BTF(Raw)	0.547	0.615	0.653	0.624	0.615	0.654	0.388	0.464	0.379	0.458	0.576	0.428	0.549
BTF(FPFH)	0.592	0.588	0.593	0.611	0.699	0.499	0.721	0.648	0.531	0.551	0.515	0.479	0.598
M3DM	0.648	0.636	0.642	0.665	0.601	0.635	0.627	0.515	0.632	0.642	0.630	0.555	0.603
Patchcore(FPFH)	0.621	0.475	0.725	0.504	0.541	0.620	0.630	0.545	0.701	0.608	0.611	0.499	0.588
Patchcore(PointMAE)	0.652	0.496	0.542	0.543	0.585	0.556	0.571	0.611	0.515	0.601	0.456	0.463	0.595
CPMF	0.432	0.477	0.697	0.681	0.685	0.418	0.501	0.621	0.602	0.655	0.601	0.618	0.597
RegAD	0.455	0.618	0.77	0.675	0.555	0.441	0.381	0.515	0.538	0.608	0.495	0.601	0.584
Ours	0.601	0.602	0.502	0.625	0.652	0.614	0.615	0.504	0.701	0.665	0.681	0.760	0.621

Table 4. **I-AP score for anomaly detection of 40 categories of our Anomaly-ShapeNet dataset**