表S1. MVTec AD [5]における異常検出性能(AUROC)。PaDiM\*は、画像レベル異常検出タスク用に特化して選択されたバックボーンを用いた[14]の結果を指し、当研究では再現できなかった。

$\downarrow Method \setminus Dataset \rightarrow$	Avg	Bottle	Cable	Capsule	Carpet	Grid	Hazeln.	Leather	Metal Nut	Pill	Screw	Tile	Toothb.	Trans.	Wood	Zipper
GeoTrans [20]	67.2	74.4	78.3	67.0	43.7	61.9	35.9	84.1	81.3	63.0	50.0	41.7	97.2	86.9	61.1	82.0
GANomaly [2]	76.2	89.2	75.7	73.2	69.9	70.8	78.5	84.2	70.0	74.3	74.6	79.4	65.3	79.2	83.4	74.5
DSEBM [58]	70.9	81.8	68.5	59.4	41.3	71.7	76.2	41.6	67.9	80.6	99.9	69.0	78.1	74.1	95.2	58.4
OCSVM [3]	71.9	99.0	80.3	54.4	62.7	41.0	91.1	88.0	61.1	72.9	74.7	87.6	61.9	56.7	95.3	51.7
ITAE [25]	83.9	94.1	83.2	68.1	70.6	88.3	85.5	86.2	66.7	78.6	100	73.5	100	84.3	92.3	87.6
SPADE [10]	85.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CAVGA-R <sub>w</sub> [52]	90	96	92	93	88	84	97	89	82	86	81	97	89	99	79	96
PatchSVDD [56]	92.1	98.6	90.3	76.7	92.9	94.6	92.0	90.9	94.0	86.1	81.3	97.8	100	91.5	96.5	97.9
DifferNet [42]	94.9	99.0	95.9	86.9	92.9	84.0	99.3	97.1	96.1	88.8	96.3	99.4	98.6	91.1	99.8	95.1
PaDiM [14]	95.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MahalanobisAD [40]	95.8	100	95.0	95.1	100	89.7	99.1	100	94.7	88.7	85.2	99.8	96.9	95.5	99.6	97.9
PaDiM* [14]	97.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PatchCore-25	99.1	100	99.5	98.1	98.7	98.2	100	100	100	96.6	98.1	98.7	100	100	99.2	99.4
PatchCore-10	99.0	100	99.4	97.8	98.7	97.9	100	100	100	96.0	97.0	98.9	99.7	100	99.0	99.5
PatchCore-1	99.0	100	99.3	98.0	98.0	98.6	100	100	99.7	97.0	96.4	99.4	100	99.9	99.2	99.2

表S2. MVTec [5]における異常セグメンテーション性能を、ピクセル単位のAUROCで測定した結果。

$\downarrow Method \setminus Dataset \rightarrow$	Avg	Bottle	Cable	Capsule	Carpet	Grid	Hazeln.	Leather	Metal Nut	Pill	Screw	Tile	Toothb.	Trans.	Wood	Zipper
vis. expl. VAE [31]	86	87	90	74	78	73	98	95	94	83	97	80	94	93	77	78
$AE_{SSIM}$ [5]	87	93	82	94	87	94	97	78	89	91	96	59	92	90	73	88
$\gamma$ -VAE + grad. [15]	88.8	93.1	88.0	91.7	72.7	97.9	98.8	89.7	91.4	93.5	97.2	58.1	98.3	93.1	80.9	87.1
CAVGA-R <sub>w</sub> [52]	89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PatchSVDD [56]	95.7	98.1	96.8	95.8	92.6	96.2	97.5	97.4	98.0	95.1	95.7	91.4	98.1	97.0	90.8	95.1
SPADE [10]	96.0	98.4	97.2	99.0	97.5	93.7	99.1	97.6	98.1	96.5	98.9	87.4	97.9	94.1	88.5	96.5
PaDiM [14]	97.5	98.3	96.7	98.5	99.1	97.3	98.2	99.2	97.2	95.7	98.5	94.1	98.8	98.5	94.9	98.5
PatchCore-25	98.1	98.6	98.4	98.8	99.0	98.7	98.7	99.3	98.4	97.4	99.4	95.6	98.7	96.3	95.0	98.8
PatchCore-10	98.1	98.6	98.5	98.9	99.1	98.7	98.7	99.3	98.4	97.6	99.4	95.9	98.7	96.4	95.1	98.9
PatchCore-1	98.0	98.5	98.2	98.8	98.9	98.6	98.6	99.3	98.4	97.1	99.2	96.1	98.5	94.9	95.1	98.8

表S3. MVTec [5]における異常セグメンテーション性能 (PRO [%] [5, 10]で測定)。

↓ Method \Dataset —	Avg	Bottle	Cable	Capsule	Carpet	Grid	Hazeln.	Leather	Metal Nut	Pill	Screw	Tile	Toothb.	Trans.	Wood	Zipper
AE <sub>SSIM</sub> [5] Student [6] SPADE [10] PaDiM [14]	69.4 85.7 91.7 92.1	91.8 95.5 94.8	47.8 86.5 90.9 88.8	86.0 91.6 93.7 93.5	64.7 69.5 94.7 96.2	84.9 81.9 86.7 94.6	91.6 93.7 <b>95.4</b> 92.6	56.1 81.9 97.2 97.8	60.3 89.5 <b>94.4</b> 85.6	93.5 94.6 92.7	88.7 92.8 96.0 94.4	17.5 <b>91.2</b> 75.6 86.0	78.4 86.3 <b>93.5</b> 93.1	72.5 70.1 <b>87.4</b> 84.5	60.5 72.5 87.4 <b>91.1</b>	66.5 93.3 92.6 95.9
PatchCore-25 PatchCore-10 PatchCore-1	93.4 93.5 93.1	96.2 96.1 95.9	92.5 <b>92.6</b> 91.6	95.5 95.5 95.5	<b>96.6</b> <b>96.6</b> 96.5	96.0 95.9 <b>96.1</b>	93.8 93.9 93.8	98.9 98.9 98.9	91.4 91.3 91.2	93.2 94.1 92.9	<b>97.9</b> <b>97.9</b> 97.1	87.3 87.4 88.3	91.5 91.4 90.2	83.7 83.5 81.2	89.4 89.6 89.5	97.1 97.1 97.0

表S4. MVTec AD [5]における異常検出と局所化性能 (AUROC) を、PatchCore-1を使用し、より大きな画像 (280 × 280) とWideResNet 101バックボーンで評価した結果。

↓ メトリクス \データセ	ット → 平均 ホ	ドトル ケーブル	カプセル;	カーペット	Grid	Hazeln.	Leather	Metal Nut	Pill	Screw	Tile	Toothb.	Trans.	Wood	Zipper
			P	atchCore-	-1, Hiera	archies (2,	3), Images	ize 280							
AUROC pwAUROC PRO	99.4   10 98.2   98 94.4   96	.6 98.4	98.2 99.1 96.0	98.4 98.7 97.4	99.8 98.7 96.8	100 98.8 91.2	100 99.3 99.1	100 98.8 94.8	97.2 97.8 94.0	98.9 99.3 97.5	98.9 96.1 89.5	100 98.8 95.5	100 96.4 84.8	99.5 95.1 91.7	99.9 98.9 97.8
			Pa	tchCore-1	l, Hierar	chies (1, 2	2, 3), Image	size 280							
AUROC pwAUROC PRO	99.2   10 98.4   98 95.0   96	.6 98.7	98.1 99.1 96.3	98.2 98.7 97.5	98.3 98.8 97.0	100 98.8 91.5	100 99.3 99.1	100 99.0 95.4	97.1 98.6 96.0	99.0 99.5 98.1	98.9 96.3 90.0	98.9 98.9 95.8	99.7 97.1 85.9	99.9 95.2 92.0	99.7 99.0 98.0



Table S1. Anomaly Detection Performance (AUROC) on MVTec AD [5]. PaDiM\* denotes a result from [14] with a backbone specifically selected for the task of image-level anomaly detection, which we could not reproduce.

$\downarrow Method \setminus Dataset \to$	Avg	Bottle	Cable	Capsule	Carpet	Grid	Hazeln.	Leather	Metal Nut	Pill	Screw	Tile	Toothb.	Trans.	Wood	Zipper
GeoTrans [20]	67.2	74.4	78.3	67.0	43.7	61.9	35.9	84.1	81.3	63.0	50.0	41.7	97.2	86.9	61.1	82.0
GANomaly [2]	76.2	89.2	75.7	73.2	69.9	70.8	78.5	84.2	70.0	74.3	74.6	79.4	65.3	79.2	83.4	74.5
DSEBM [58]	70.9	81.8	68.5	59.4	41.3	71.7	76.2	41.6	67.9	80.6	99.9	69.0	78.1	74.1	95.2	58.4
OCSVM [3]	71.9	99.0	80.3	54.4	62.7	41.0	91.1	88.0	61.1	72.9	74.7	87.6	61.9	56.7	95.3	51.7
ITAE [25]	83.9	94.1	83.2	68.1	70.6	88.3	85.5	86.2	66.7	78.6	100	73.5	100	84.3	92.3	87.6
SPADE [10]	85.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CAVGA-R <sub>w</sub> [52]	90	96	92	93	88	84	97	89	82	86	81	97	89	99	79	96
PatchSVDD [56]	92.1	98.6	90.3	76.7	92.9	94.6	92.0	90.9	94.0	86.1	81.3	97.8	100	91.5	96.5	97.9
DifferNet [42]	94.9	99.0	95.9	86.9	92.9	84.0	99.3	97.1	96.1	88.8	96.3	99.4	98.6	91.1	99.8	95.1
PaDiM [14]	95.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MahalanobisAD [40]	95.8	100	95.0	95.1	100	89.7	99.1	100	94.7	88.7	85.2	99.8	96.9	95.5	99.6	97.9
PaDiM* [14]	97.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PatchCore-25	99.1	100	99.5	98.1	98.7	98.2	100	100	100	96.6	98.1	98.7	100	100	99.2	99.4
PatchCore-10	99.0	100	99.4	97.8	98.7	97.9	100	100	100	96.0	97.0	98.9	99.7	100	99.0	99.5
PatchCore-1	99.0	100	99.3	98.0	98.0	98.6	100	100	99.7	97.0	96.4	99.4	100	99.9	99.2	99.2

Table S2. Anomaly Segmentation Performance on MVTec [5], as measured in pixelwise AUROC.

$\downarrow$ Method \Dataset $\rightarrow$	Avg	Bottle	Cable	Capsule	Carpet	Grid	Hazeln.	Leather	Metal Nut	Pill	Screw	Tile	Toothb.	Trans.	Wood	Zipper
vis. expl. VAE [31]	86	87	90	74	78	73	98	95	94	83	97	80	94	93	77	78
$AE_{SSIM}$ [5]	87	93	82	94	87	94	97	78	89	91	96	59	92	90	73	88
$\gamma$ -VAE + grad. [15]	88.8	93.1	88.0	91.7	72.7	97.9	98.8	89.7	91.4	93.5	97.2	58.1	98.3	93.1	80.9	87.1
CAVGA- $R_w$ [52]	89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PatchSVDD [56]	95.7	98.1	96.8	95.8	92.6	96.2	97.5	97.4	98.0	95.1	95.7	91.4	98.1	97.0	90.8	95.1
SPADE [10]	96.0	98.4	97.2	99.0	97.5	93.7	99.1	97.6	98.1	96.5	98.9	87.4	97.9	94.1	88.5	96.5
PaDiM [14]	97.5	98.3	96.7	98.5	99.1	97.3	98.2	99.2	97.2	95.7	98.5	94.1	98.8	98.5	94.9	98.5
PatchCore-25	98.1	98.6	98.4	98.8	99.0	98.7	98.7	99.3	98.4	97.4	99.4	95.6	98.7	96.3	95.0	98.8
PatchCore-10	98.1	98.6	98.5	98.9	99.1	98.7	98.7	99.3	98.4	97.6	99.4	95.9	98.7	96.4	95.1	98.9
PatchCore-1	98.0	98.5	98.2	98.8	98.9	98.6	98.6	99.3	98.4	97.1	99.2	96.1	98.5	94.9	95.1	98.8

Table S3. Anomaly Segmentation Performance on MVTec [5], as measured in PRO [%] [5, 10].

$\downarrow Method \setminus Dataset \to$	Avg	Bottle	Cable	Capsule	Carpet	Grid	Hazeln.	Leather	Metal Nut	Pill	Screw	Tile	Toothb.	Trans.	Wood	Zipper
$AE_{SSIM}$ [5]	69.4	83.4	47.8	86.0	64.7	84.9	91.6	56.1	60.3	83.0	88.7	17.5	78.4	72.5	60.5	66.5
Student [6]	85.7	91.8	86.5	91.6	69.5	81.9	93.7	81.9	89.5	93.5	92.8	91.2	86.3	70.1	72.5	93.3
SPADE [10]	91.7	95.5	90.9	93.7	94.7	86.7	95.4	97.2	94.4	94.6	96.0	75.6	93.5	87.4	87.4	92.6
PaDiM [14]	92.1	94.8	88.8	93.5	96.2	94.6	92.6	97.8	85.6	92.7	94.4	86.0	93.1	84.5	91.1	95.9
PatchCore-25	93.4	96.2	92.5	95.5	96.6	96.0	93.8	98.9	91.4	93.2	97.9	87.3	91.5	83.7	89.4	97.1
PatchCore-10	93.5	96.1	92.6	95.5	96.6	95.9	93.9	98.9	91.3	94.1	97.9	87.4	91.4	83.5	89.6	97.1
PatchCore-1	93.1	95.9	91.6	95.5	96.5	96.1	93.8	98.9	91.2	92.9	97.1	88.3	90.2	81.2	89.5	97.0

Table S4. Anomaly Detection and Localization Performance (AUROC) on MVTec AD [5] with PatchCore-1 using larger images (280  $\times$  280) and a WideResNet101 backbone.

$ $ $\downarrow$ Metric \Dataset $\rightarrow$	Avg	Bottle	Cable	Capsule	Carpet	Grid	Hazeln.	Leather	Metal Nut	Pill	Screw	Tile	Toothb.	Trans.	Wood	Zipper
				Pa	tchCore-	1, Hiera	rchies (2,	3), Images	ize 280							
AUROC	99.4	100	99.6	98.2	98.4	99.8	100	100	100	97.2	98.9	98.9	100	100	99.5	99.9
pwAUROC	98.2	98.6	98.4	99.1	98.7	98.7	98.8	99.3	98.8	97.8	99.3	96.1	98.8	96.4	95.1	98.9
PRO	94.4	96.6	93.8	96.0	97.4	96.8	91.2	99.1	94.8	94.0	97.5	89.5	95.5	84.8	91.7	97.8
				Pato	hCore-1	, Hierar	chies (1, 2	2, 3), Image	esize 280							
AUROC	99.2	100	99.7	98.1	98.2	98.3	100	100	100	97.1	99.0	98.9	98.9	99.7	99.9	99.7
pwAUROC	98.4	98.6	98.7	99.1	98.7	98.8	98.8	99.3	99.0	98.6	99.5	96.3	98.9	97.1	95.2	99.0
PRO	95.0	96.6	94.6	96.3	97.5	97.0	91.5	99.1	95.4	96.0	98.1	90.0	95.8	85.9	92.0	98.0

