Supplementary Material

Table S1: Algorithm performances across all subgroups of imaging acquisitions and scan parameters, and patients' groups (US regions, patients' age and sex).

PARAMETER	CATEGORY	TP	FN	TN	FP	Sensitivity [95% CI]	Specificity [95% CI]
TYPE	All	170	16	184	17	91.4% [86.4% – 95.0%]	91.5% [86.8% – 95.0%]

PARAMETER	CATEGORY	TP	FN	TN	FP	Sensitivity [95% CI]	Specificity [95% CI]
GENDER	Male	85	106	8	6	93.41% [86.2% - 97.5%]	92.98% [86.6% - 96.9%]
	Female	85	78	9	10	89.47% [81.5% - 94.8%]	89.66% [81.3% - 95.2%]

PARAMETER	CATEGORY	TP	FN	TN	FP	Sensitivity [95% CI]	Specificity [95% CI]
AGE	18 ≤ Age < 40	23	0	14	3	100% [85.2% - 100%]	82.35% [56.6% - 96.2%]
	40 ≤ Age ≤ 60	61	3	45	4	95.31% [86.9% - 99.0%]	91.84% [80.4% - 97.7%]
	Age > 60	86	13	125	10	86.87% [78.6% - 92.8%]	92.59% [86.8% - 96.4%]

PARAMETER	CATEGORY	TP	FN	TN	FP	Sensitivity [95% CI]	Specificity [95% CI]
SLICE THICKNESS	ST < 1.5 mm	75	6	71	8	92.59% [84.6% - 97.2%]	89.87% [81.0% - 95.5%]
	1.5 mm ≤ ST ≤ 2.5 mm	95	10	113	9	90.48% [83.2% - 95.3%]	92.62% [86.5% - 96.6%]

PARAMETER	CATEGORY	TP	FN	TN	FP	Sensitivity [95% CI]	Specificity [95% CI]
DETECTOR ROWS	4 < NDR ≤ 8	0	0	0	0	NA	NA
	8 < NDR ≤ 16	24	0	14	1	100% [85.8% - 100%]	93.33% [68.1% - 99.8%]
	16 < NDR ≤ 32	22	3	31	2	88% [68.8% - 97.5%]	93.94% [79.8% - 99.3%]
	32 < NDR ≤ 64	94	10	105	12	90.38% [83.0% - 95.3%]	89.74% [82.8% - 94.6%]
	64 < NDR ≤ 128	19	2	21	1	90.48% [69.6% - 98.8%]	95.45% [77.2% - 99.9%]
	128 < NDR ≤ 256	0	0	0	0	NA	NA
	256 < NDR ≤ 320	1	0	0	0	100% [2.5% - 100%]	NA

PARAMETER	CATEGORY	TP	FN	TN	FP	Sensitivity [95% CI]	Specificity [95% CI]
US REGIONS	Continental	23	3	25	2	88.46% [69.9% - 97.6%]	92.59% [75.7% - 99.1%]
	Northeast	83	6	93	5	93.26% [85.9% - 97.5%]	94.9% [88.5% - 98.3%]
	Pacific	16	1	26	3	94.12% [71.3% - 99.9%]	89.66% [72.7% - 97.8%]
	Southeast	48	6	40	7	88.89% [77.4% - 95.8%]	85.11% [71.7% - 93.8%]

MANUFACTURER	GE MEDICAL SYSTEMS	105	12	100	10	89.74% [82.8% - 94.6%]	90.91% [83.9% - 95.6%]
	PHILIPS	15	0	15	2	100% [78.2% - 100%]	88.24% [63.6% - 98.5%]
	SIEMENS	36	2	51	4	94.74% [82.3% - 99.4%]	92.73% [82.4% - 98.0%]
	TOSHIBA/ CANON	13	2	18	1	86.67% [59.5% - 98.3%]	94.74% [74.0% - 99.9%]
	PNMS	1	0	0	0	100% [2.5% - 100%]	NA

Table S2: CINA–PE standalone validation study: Details regarding the found false negative (FN) cases.

CASE N°	False negatives' descriptions
FN #1	Missed right very small segmental **Chronic PE** **This case was subject of consensus** **Presence of vena cava artifacts** Presence bronchiolitis
FN #2	Missed right lobar and segmental **Chronic PE** Presence of **linear filling defect** within the PE (more peripheral filling defect) Presence of ground glass opacity Presence of pleural fluid
FN #3	Missed right very small segmental PE Presence of tots of lung nodules
FN #4	Missed left small segmental PE located close to a **partial volume effect artifact** The location of this PE is **limit subsegmental** Presence of bilateral pleural effusions
FN #5	Missed right very small segmental **Chronic PE** Presence of **acquisition artifacts** Presence of atelectasis
FN #6	Missed very small left lobar and segmental **Chronic** PE close to **partial volume effect artifacts** **This case was subject of consensus** Presence of multiple noncalcified pulmonary nodules Presence of calcified mediastinal/subcarinal lymph node
FN #7	Missed right interlobar **Chronic PE** Presence of **linear filling defect** within the PE **This case was subject of consensus**
FN #8	Missed left segmental PE Presence of **bad contrast filling**

FN #9	Missed right main **Chronic PE** PE located inside of **important motion artifacts** and **cava vena artifacts**
FN #10	Missed right segmental PE in presence of **volume partial effect artifacts** Presence of **bad contrast filling**
FN #11	Missed left small segmental PE **Nosy images** **Presence of bad contrast filling** Presence of pulmonary edema, pneumonia, and pleural effusion
FN #12	Missed right segmental PE The location of this PE is **limit subsegmental** **Complete occlusion of the artery**
FN #13	Missed bilateral small segmental PE The location of this PE is **limit subsegmental**
FN #14	Missed right segmental PE close to **hilar lymph node** and **partial volume effect artefacts** Presence of bunch of nodules, pleural effusion, and ground glass opacity Presence of metastasis
FN #15	Missed left main PE in presence of **tumor near to the occlusion** Presence of metastatic nodules Presence of Pneumonia and complex pleural effusion
FN #16	Missed right main PE **at the limits of chronic PE transformation** Presence of an important pneumothorax in the right lung.

Table S3: CINA–PE standalone validation study: Details regarding the found false positive (FP) cases.

CASE N°	False positives' descriptions
FP #1	PE wrongly detected within **a pulmonary vein** **Important vena cava artifacts** **Contrast mixing**
FP #2	Large **subsegmental** PE **correctly** detected **This case was subject of consensus** Presence of atelectasis, consolidation, and pleural effusion
FP #3	**Very bad quality images**: PE wrongly detected in **the pleural effusion** in presence of **very noisy images** and **important streak artifacts** Presence of atelectasis, pneumothorax, and pleural effusion
FP #4	PE wrongly detected **in the vena cava artifacts**. **This case was subject of consensus** Presence of nodule, atelectasis, and pneumonia Presence of pneumothorax and pleural effusion Presence of drainage catheter
FP #5	PE wrongly detected in the **hilar lymph node** Presence of emphysema, consolidation, and atelectasis Presence of pneumothorax and pleural effusion
FP #6	PE wrongly detected in the **vena cava artifacts**. **Poor contrast filling and anatomic distortion** Presence of ground glass opacity and lung infiltration Presence of pneumothorax, and atelectasis Presence of emphysema
FP #7	Small PE **correctly** detected within a **subsegmental** artery Presence of atelectasis
FP #8	PE wrongly detected in the **cava vein artefacts**. Presence of emphysema Presence of nodule
FP #9	PE wrongly detected within a **saccular aneurysm** stuck to the main pulmonary artery. Presence of **central venous catheter** with the tip in the brachiocephalic vein Presence of atelectasis/consolidation, and pleural effusion
FP #10	PE **correctly** detected within a **subsegmental** artery **This case was subject of consensus** **Contrast mixing** Presence of **streak artifacts and important motion artifacts** There is an aortic repair (graft) An endotracheal tube is in place Presence of atelectasis and lung infiltration

FP #11	PE **correctly** detected within **subsegmental** artery with **partial volume effect artifacts** Presence of **bad contrast filling** **Noisy images** Presence of atelectasis, and nodules
FP #12	**Partial volume effect artifacts** (crossing between a vein and an artery) Presence of **bad contrast filling, and motion artifacts** Presence of calcified pleural plaques
FP #13	Streak artifact (graft) Presence of **streak artifacts, bad contrast filling, and motion artifacts** **This case was subject of consensus**
FP #14	PE correctly detected in a **subsegmental** artery **This case was subject of consensus** Presence of pulmonary nodules
FP #15	PE correctly detected in a **subsegmental** artery, although very close to the segmental artery **This case was subject of consensus**
FP # 16	PE within **a pulmonary vein** Presence of ground glass opacity
FP #17	PE within **vena cava artifacts**