

FIG. 1a

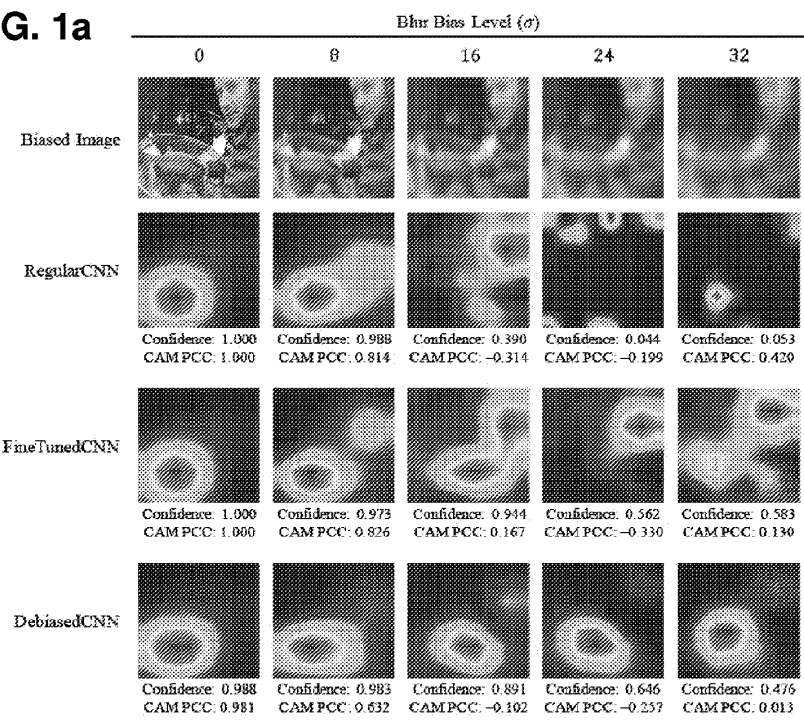


FIG. 1b

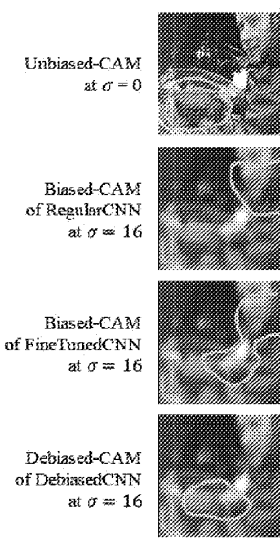
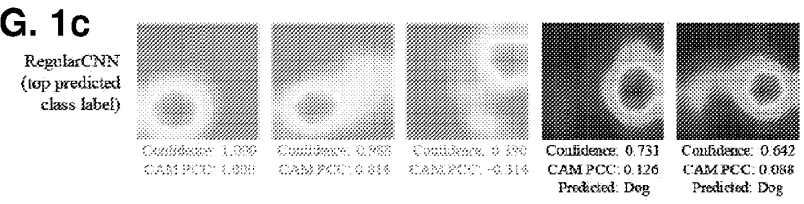


FIG. 1c



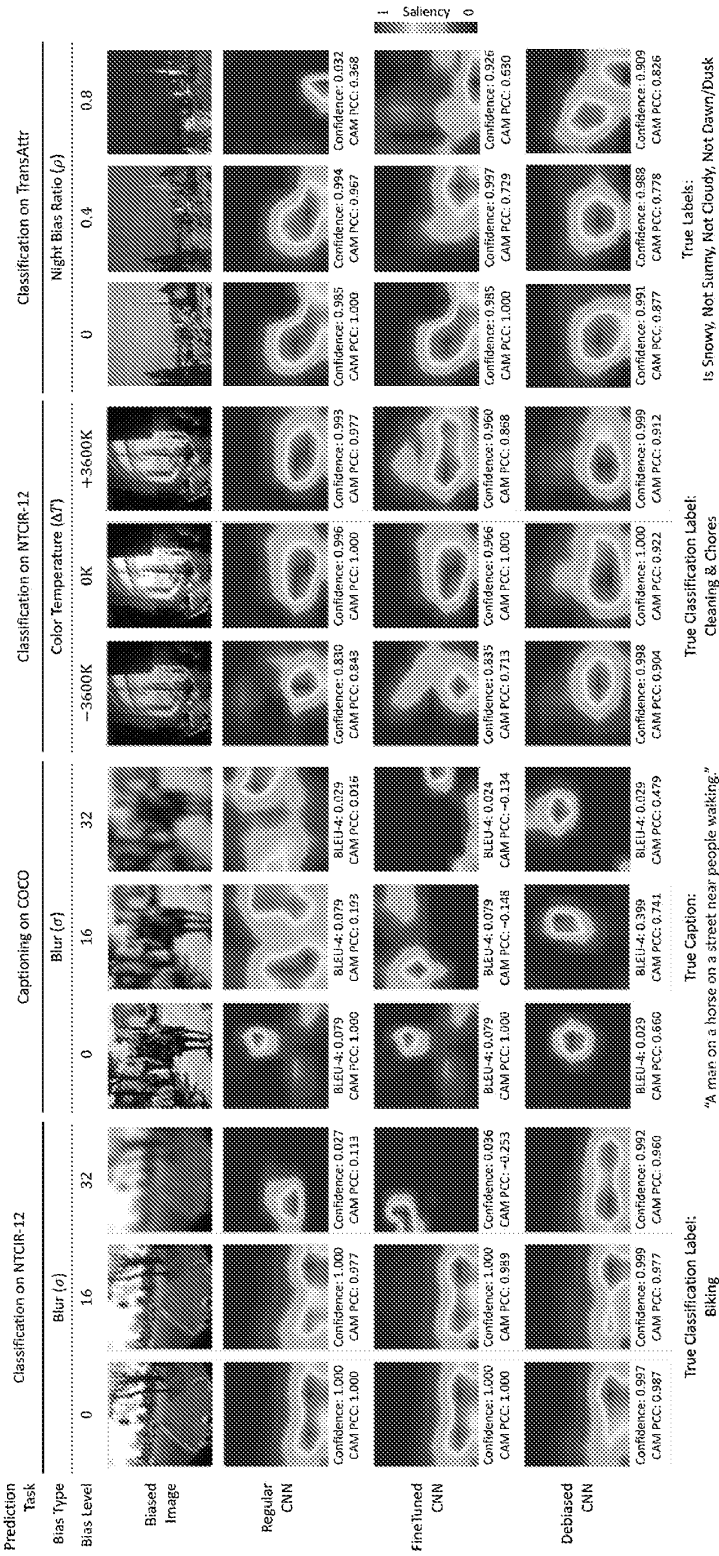


FIG. 2a

FIG. 2b

FIG. 2c

FIG. 2d

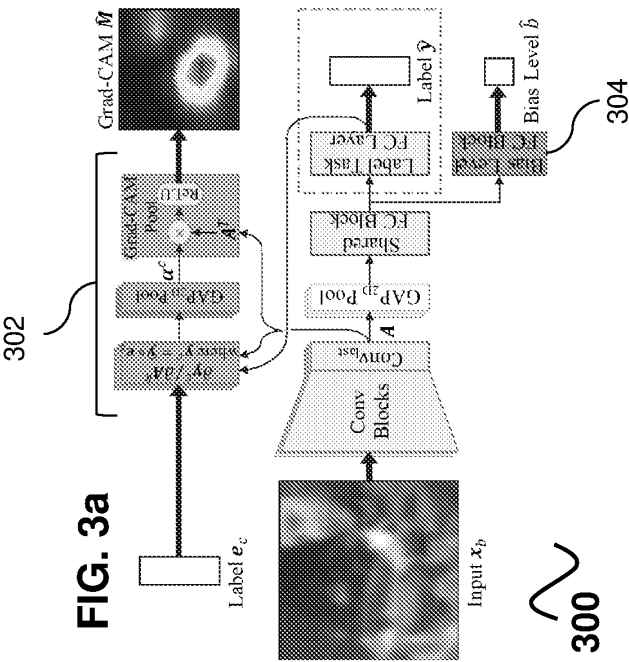


FIG. 3b

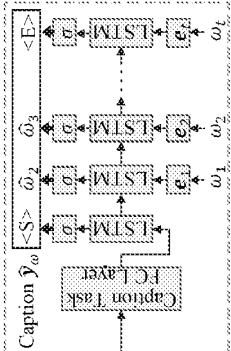
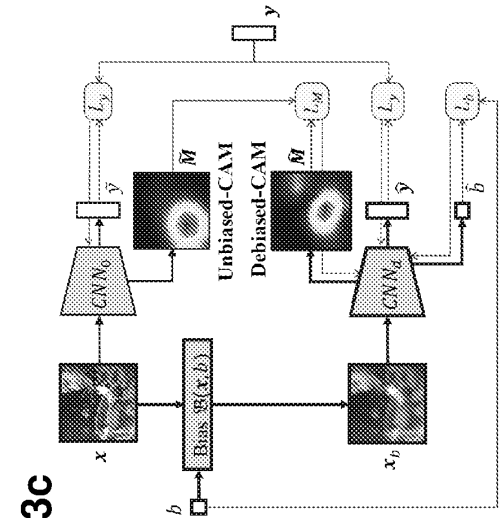
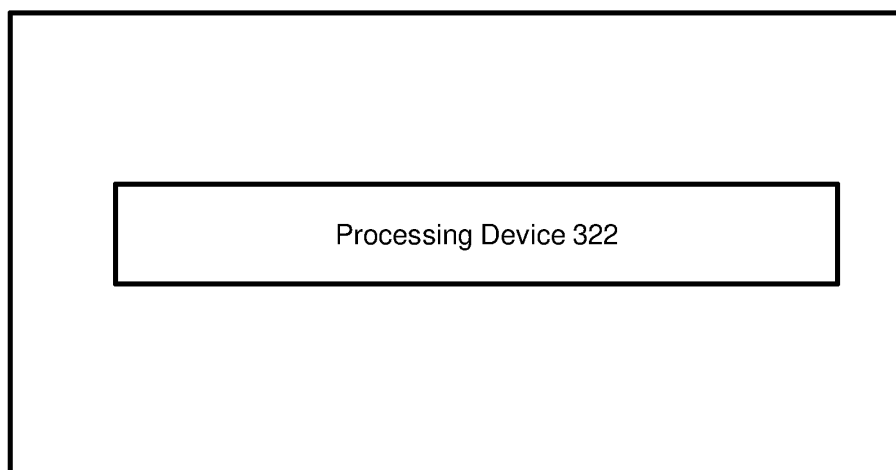


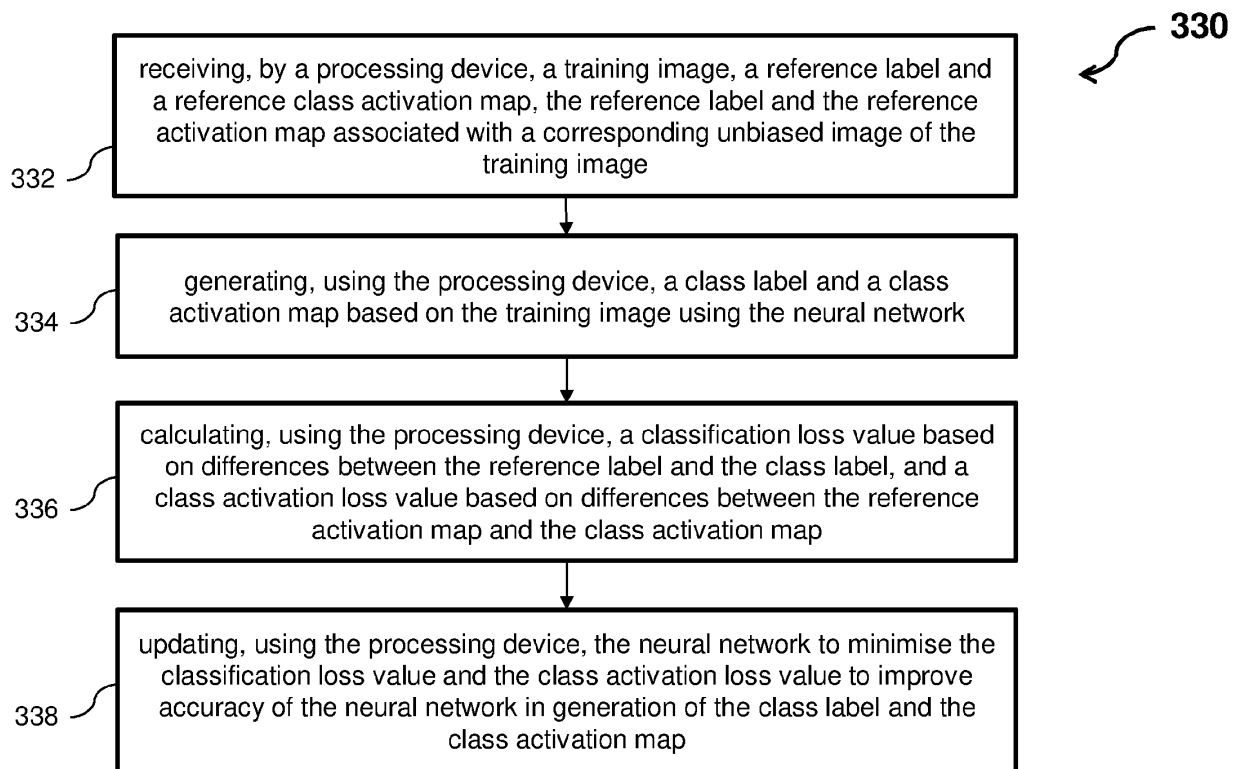
FIG. 3c





320 ~

FIG. 3d

**FIG. 3e**

340 ~

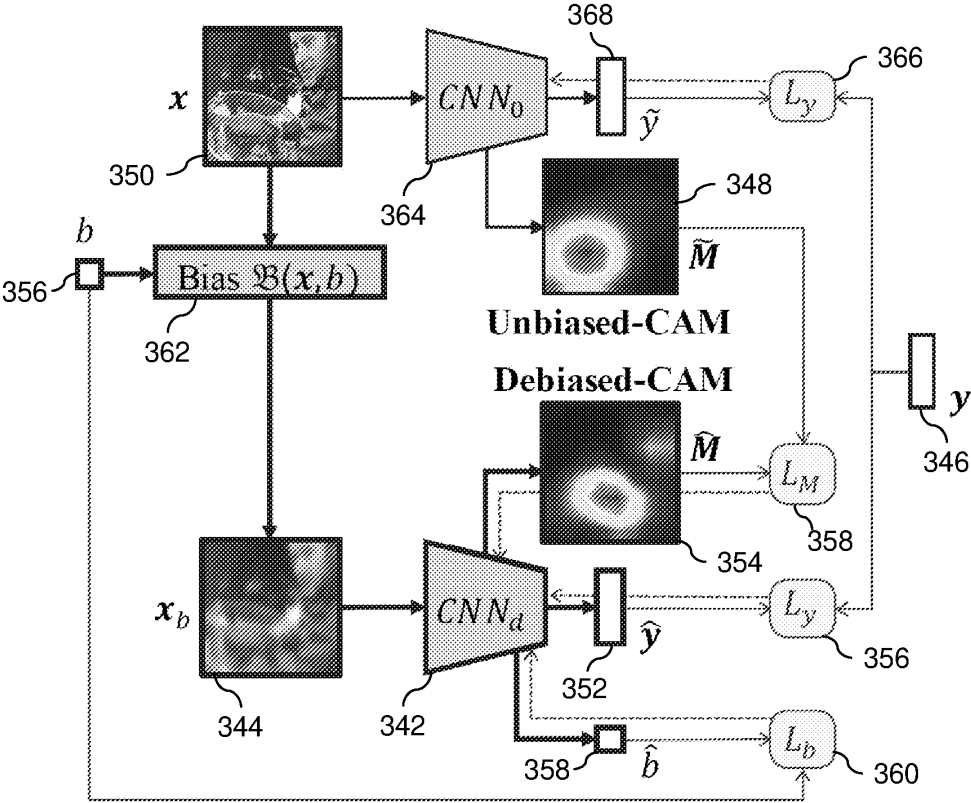


FIG. 3f

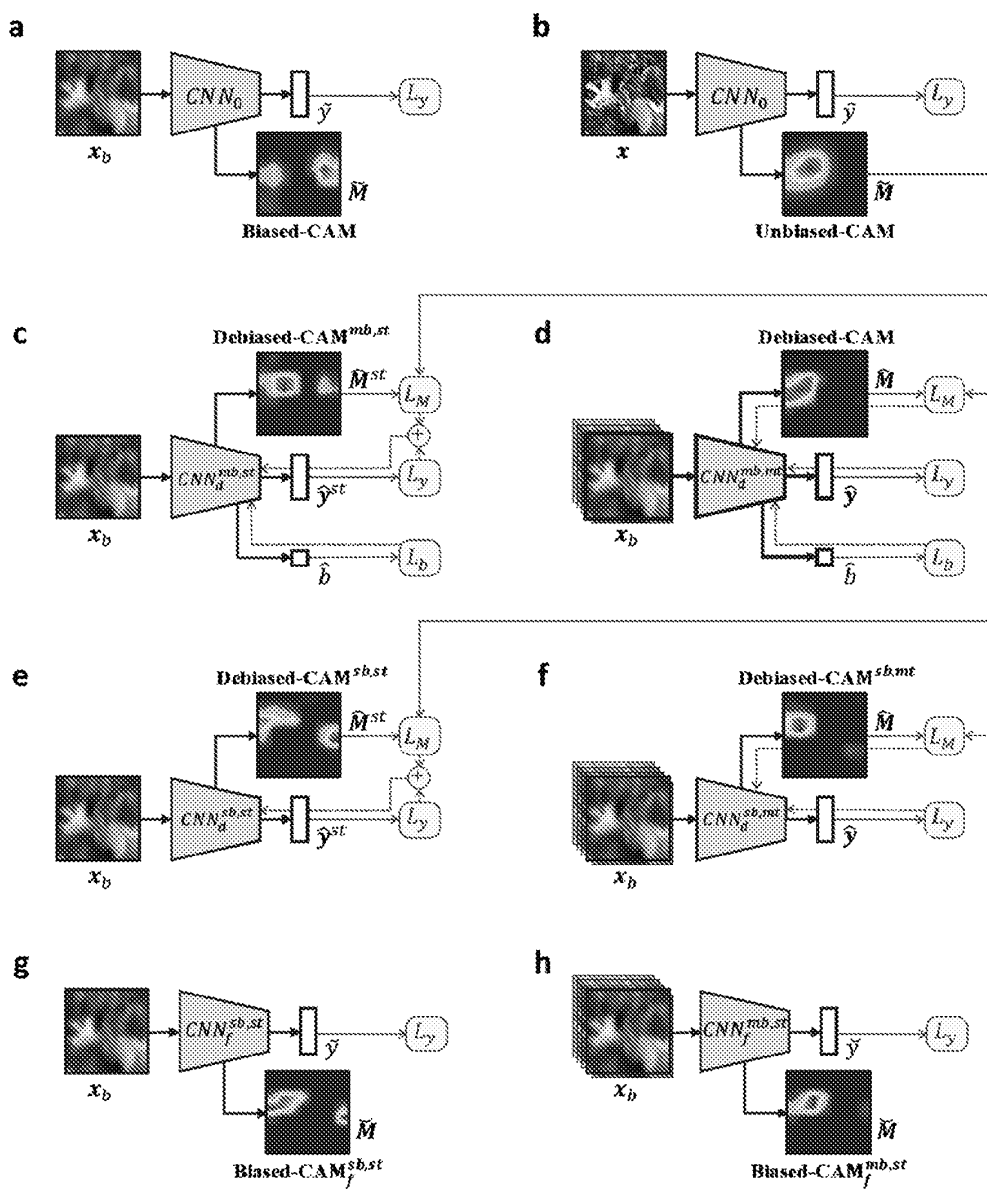


FIG. 4

Model Variant	Training Loss Function	Training Set Bias Levels
RegularCNN	$L(\mathbf{w}) = L_y(\mathcal{Y}, \hat{\mathbf{y}}(\mathbf{w}))$	$b = 0$
FineTunedCNN (sb, st)	$L(\mathbf{w}) = L_y(\mathcal{Y}, \hat{\mathbf{y}}(\mathbf{w}))$	$b \in (0, b_{max}]$
FineTunedCNN (mb, st)	$L(\mathbf{w}) = L_y(\mathcal{Y}, \hat{\mathbf{y}}(\mathbf{w}))$	$b \in B_{rand} \sim U([0, b_{max}])$
DebiasedCNN (sb, st)	$L(\mathbf{w}) = L_y(\mathcal{Y}, \hat{\mathbf{y}}(\mathbf{w})) + \omega_M L_M(\tilde{\mathbf{M}}, \hat{\mathbf{M}})$	$b \in (0, b_{max}]$
DebiasedCNN (mb, st)	$\mathbf{L}(\mathbf{w}) = \begin{pmatrix} L_y(\mathcal{Y}, \hat{\mathbf{y}}(\mathbf{w})) + \omega_M L_M(\tilde{\mathbf{M}}, \hat{\mathbf{M}}) \\ \omega_b L_b(b, \hat{b}(\mathbf{w})) \end{pmatrix}$	$b \in B_{rand}$
DebiasedCNN (sb, mt)	$\mathbf{L}(\mathbf{w}) = \begin{pmatrix} L_y(\mathcal{Y}, \hat{\mathbf{y}}(\mathbf{w})) \\ \omega_M L_M(\tilde{\mathbf{M}}, \hat{\mathbf{M}}(\mathbf{w})) \end{pmatrix}$	$b \in (0, b_{max}]$
DebiasedCNN (mb, mt)	$\mathbf{L}(\mathbf{w}) = \begin{pmatrix} L_y(\mathcal{Y}, \hat{\mathbf{y}}(\mathbf{w})) \\ \omega_M L_M(\tilde{\mathbf{M}}, \hat{\mathbf{M}}(\mathbf{w})) \\ \omega_b L_b(b, \hat{b}(\mathbf{w})) \end{pmatrix}$	$b \in B_{rand}$

FIG. 5

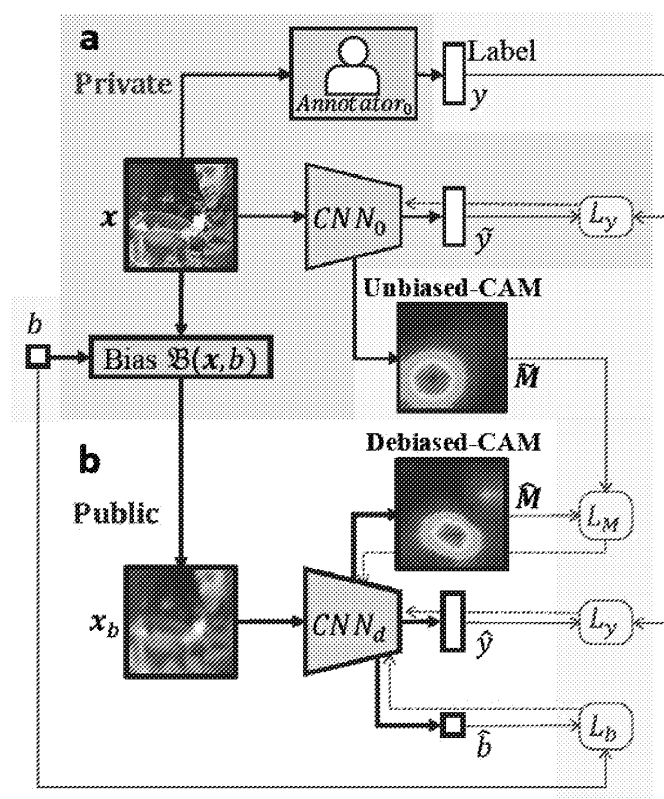
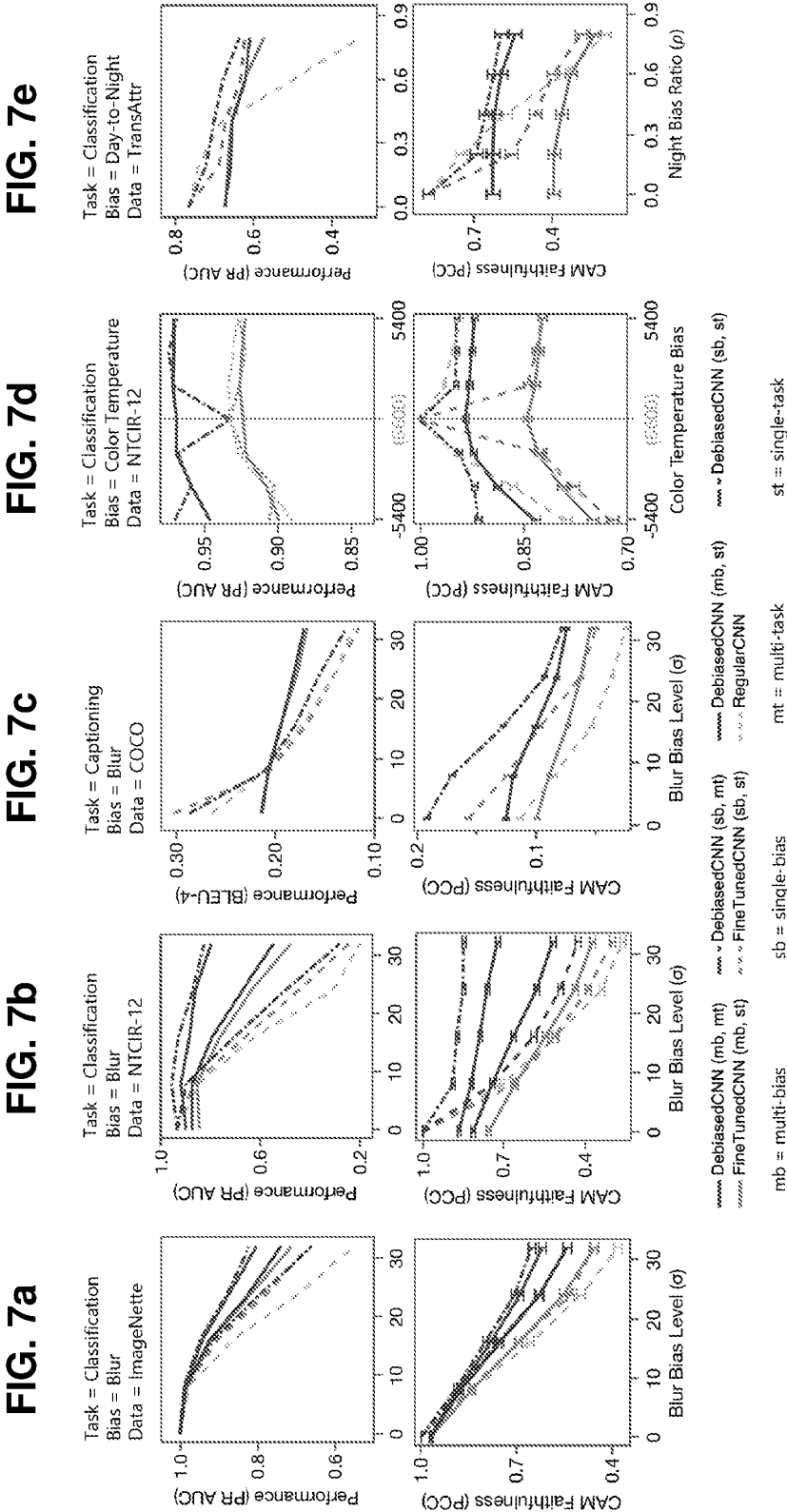
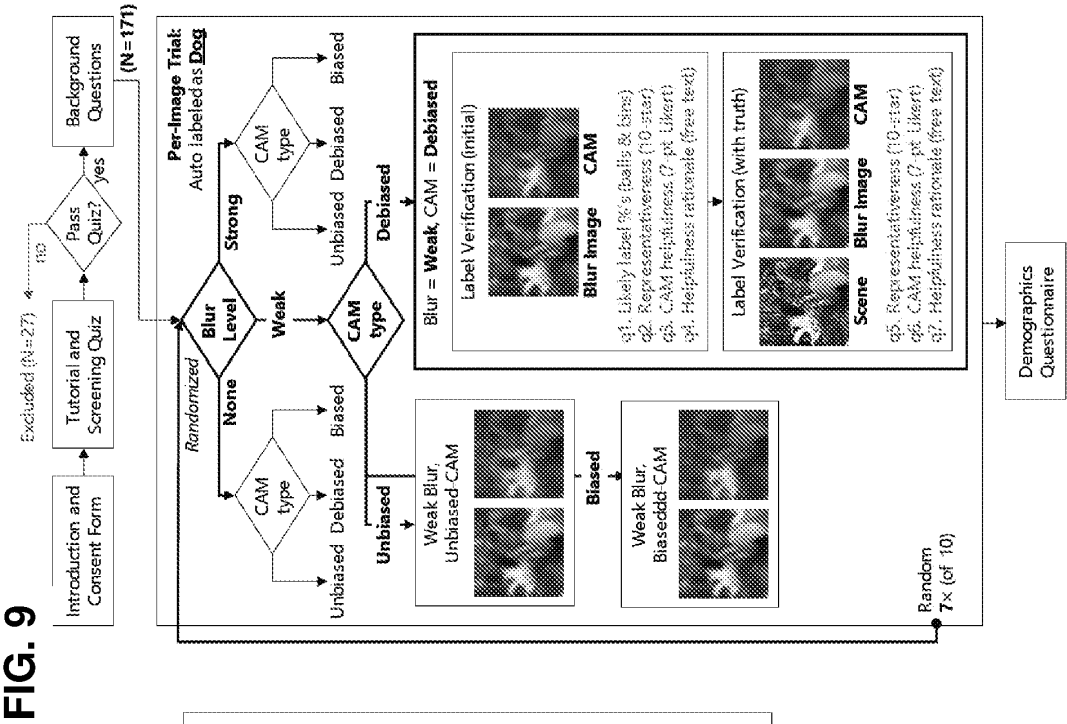


FIG. 6





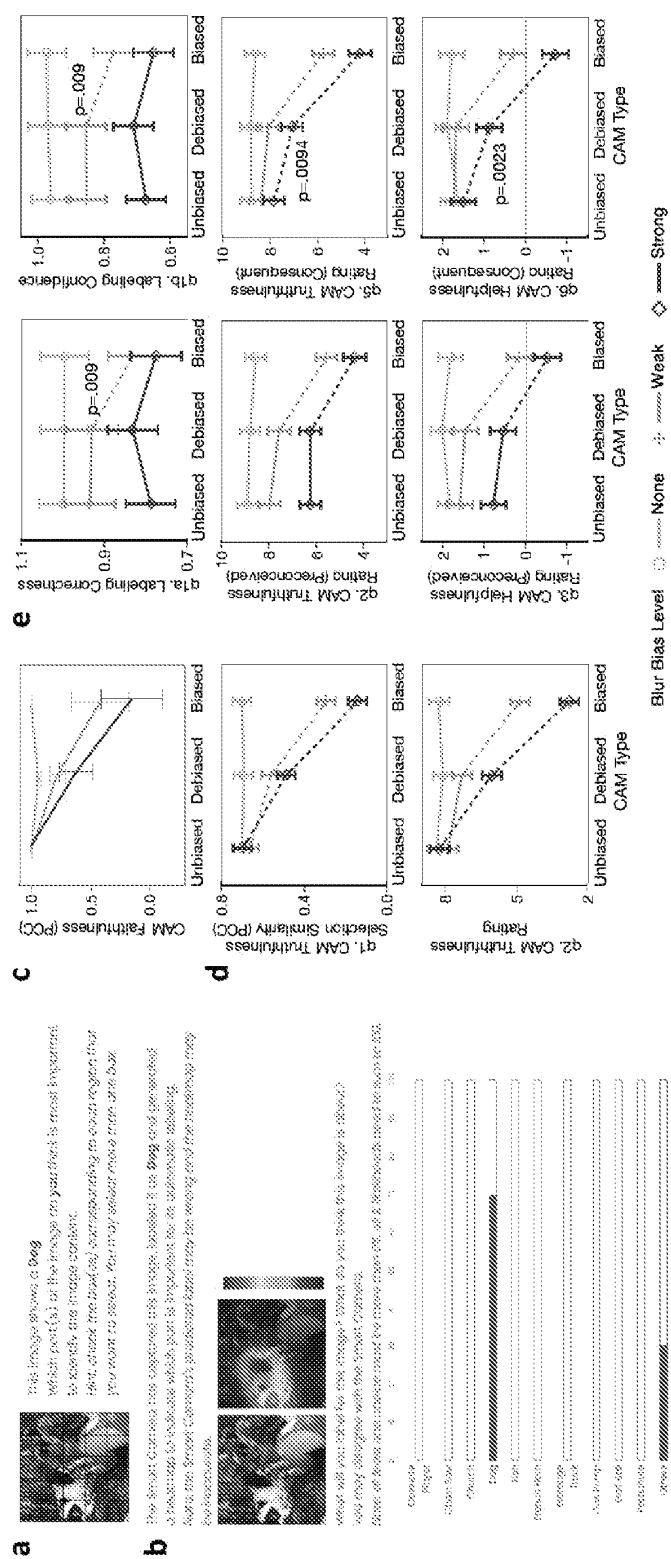


FIG. 10

Exp	Task	Model	Re-trained Dataset	Dataset Size	Train-Test Ratio
1	Classify	Inception v3 CNN	ImageNette	13,395 images	70.0% / 30.0%
2	Classify	Inception v3 CNN	NTCIR-12	44,902 images	80.0% / 20.0%
3	Caption	Neural Image Captioner (Inception v3 + LSTM)	COCO	123,287 images, 616,435 captions	66.7% / 33.3%
4	Classify	Inception v3 CNN	NTCIR-12	44,902 images	80.0% / 20.0%
5	Classify	Inception v3 CNN	TransAttr	4,584 images	80.0% / 20.0%

FIG. 11

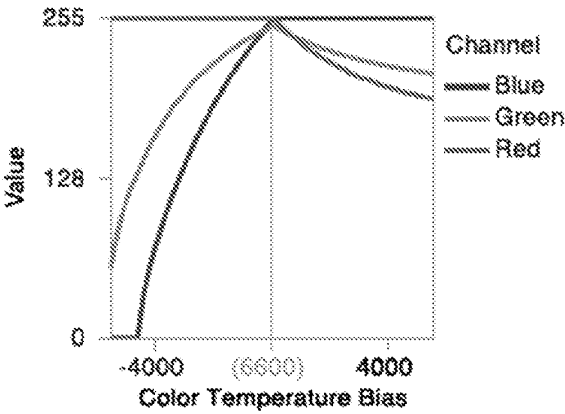


FIG. 12

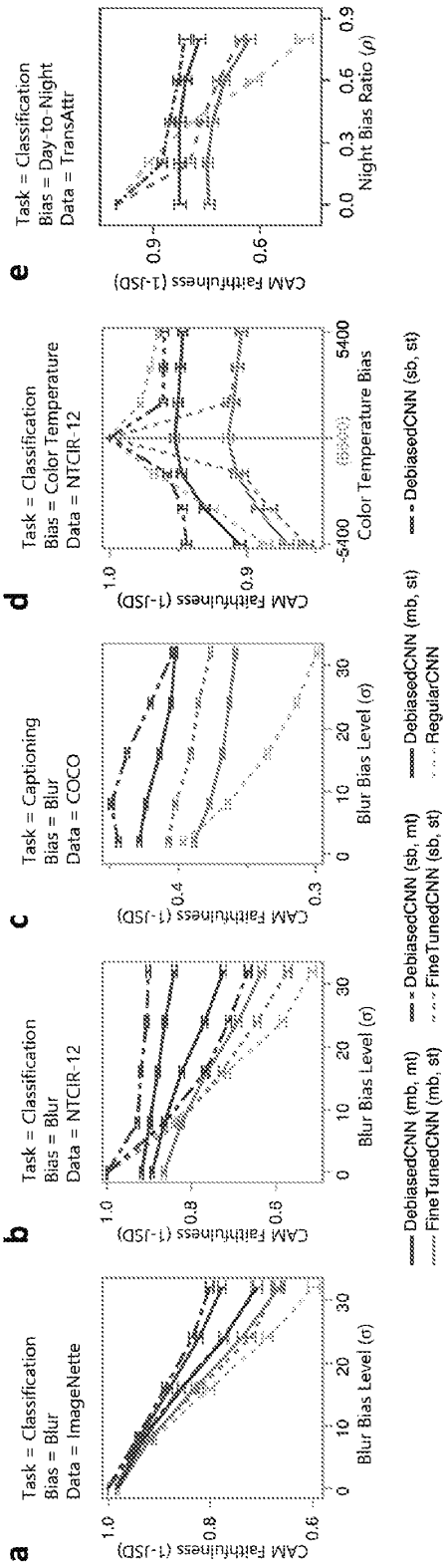


FIG. 13

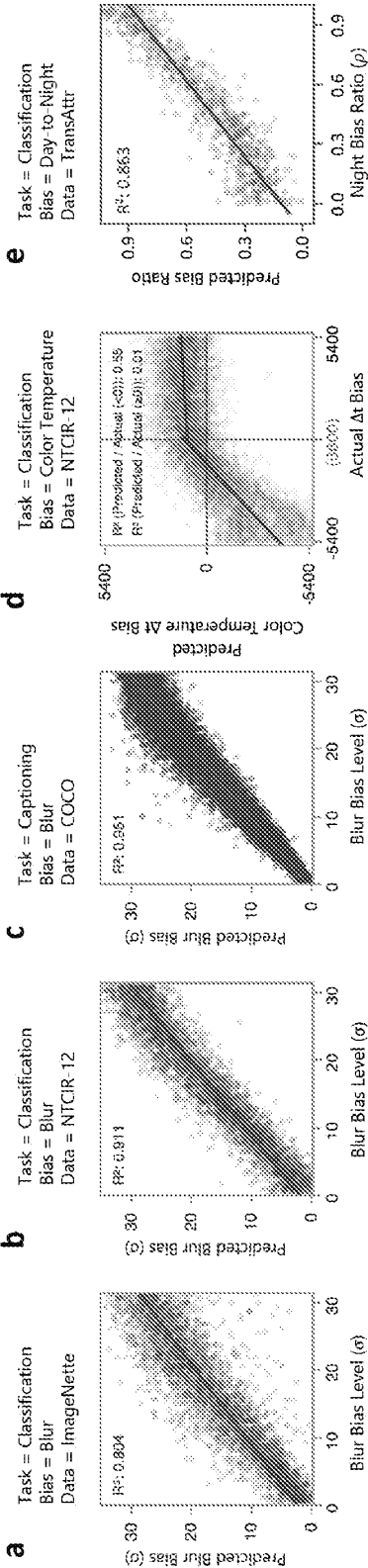


FIG. 14

a Simulation Study 1: Task = Classification, Bias = Blur, Data = ImageNet

Performance (PR AUC)	Blur Bias Level (σ)					CAM Faithfulness (PCC)	Blur Bias Level (σ)				
	0	8	16	24	32		0	8	16	24	32
DebiasedCNN (mb, mt)	0%	1%	9%	26%	45%	DebiasedCNN (mb, mt)	-3%	5%	19%	39%	63%
DebiasedCNN (sb, mt)	0%	1%	9%	27%	49%	DebiasedCNN (sb, mt)	0%	6%	21%	42%	71%
DebiasedCNN (mb, st)	0%	1%	6%	18%	33%	DebiasedCNN (mb, st)	-3%	4%	14%	26%	42%
DebiasedCNN (sb, st)	0%	1%	5%	14%	19%	DebiasedCNN (sb, st)	0%	5.0%	15%	27%	42%
FineTunedCNN (mb, st)	0%	0%	0%	15%	29%	FineTunedCNN (mb, st)	-3%	0%	6%	11%	20%
FineTunedCNN (sb, st)	0%	0%	4%	12%	21%	FineTunedCNN (sb, st)	0%	1%	6%	7%	21%

b Simulation Study 2: Task = Classification, Bias = Blur, Data = NTCIR-12

Performance (PR AUC)	Blur Bias Level (σ)					CAM Faithfulness (PCC)	Blur Bias Level (σ)				
	0	8	16	24	32		0	8	16	24	32
DebiasedCNN (mb, mt)	-4%	8%	42%	181%	302%	DebiasedCNN (mb, mt)	-14%	16%	56%	127%	181%
DebiasedCNN (sb, mt)	0%	5%	36%	139%	267%	DebiasedCNN (sb, mt)	0%	26%	73%	153%	239%
DebiasedCNN (mb, st)	-6%	3%	27%	119%	173%	DebiasedCNN (mb, st)	-19%	5%	31%	72%	101%
DebiasedCNN (sb, st)	0%	6%	13%	67%	41%	DebiasedCNN (sb, st)	0%	5%	16%	46%	65%
FineTunedCNN (mb, st)	-10%	1%	22%	107%	140%	FineTunedCNN (mb, st)	-23%	-7%	8%	30%	44%
FineTunedCNN (sb, st)	0%	2%	6%	45%	22%	FineTunedCNN (sb, st)	0%	-6%	1%	19%	15%

c Simulation Study 3: Task = Captioning, Bias = Blur, Data = COCO

Performance (BLEU-4)	Blur Bias Level (σ)					CAM Faithfulness (PCC)	Blur Bias Level (σ)				
	1	8	16	24	32		1	8	16	24	32
DebiasedCNN (mb, mt)	-10%	-2%	13%	29%	41%	DebiasedCNN (mb, mt)	10%	40%	89%	128%	207%
DebiasedCNN (sb, mt)	9%	0%	9%	11%	5%	DebiasedCNN (sb, mt)	69%	113%	132%	157%	214%
FineTunedCNN (mb, st)	-20%	-1%	13%	27%	36%	FineTunedCNN (mb, st)	-13%	5%	39%	72%	124%
FineTunedCNN (sb, st)	15%	-2%	-3%	0%	-6%	FineTunedCNN (sb, st)	38%	47%	82%	73%	112%

d Simulation Study 4: Task = Classification, Bias = Color Temperature, Data = NTCIR-12

Performance (PRAUC)	Color Temperature Bias (ΔT)							CAM Faithfulness (PCC)	Color Temperature Bias (ΔT)						
	-5400	-3600	-1800	0	1800	3600	5400		-5400	-3600	-1800	0	1800	3600	5400
DebiasedCNN (mb, mt)	7%	6%	5%	4%	4%	4%	5%	DebiasedCNN (mb, mt)	0%	3%	-3%	-7%	-4%	-3%	-2%
DebiasedCNN (sb, mt)	10%	6%	5%	0%	4%	5%	4%	DebiasedCNN (sb, mt)	16%	0%	-1%	0%	-2%	-1%	1%
FineTunedCNN (mb, st)	1%	0%	-1%	-1%	-1%	-1%	-1%	FineTunedCNN (mb, st)	-5%	-6%	-13%	-16%	-14%	-13%	-12%
FineTunedCNN (sb, st)	2%	-1%	0%	0%	-1%	-1%	0%	FineTunedCNN (sb, st)	-8%	-10%	-13%	0%	-13%	-13%	-12%

e Simulation Study 5: Task = Classification, Bias = Day-to-Night, Data = TransAur

Performance (PR AUC)	Night Bias Ratio (ρ)					CAM Faithfulness (PCC)	Night Bias Ratio (ρ)				
	0	0.2	0.4	0.6	0.8		0	0.2	0.4	0.6	0.8
DebiasedCNN (mb, mt)	-12%	-11%	-4%	24%	84%	DebiasedCNN (mb, mt)	-37%	-16%	7%	66%	169%
DebiasedCNN (sb, mt)	0%	-3%	3%	36%	92%	DebiasedCNN (sb, mt)	0%	-8%	13%	74%	196%
FineTunedCNN (mb, st)	-12%	-10%	-4%	25%	73%	FineTunedCNN (mb, st)	-61%	-48%	-37%	-8%	18%
FineTunedCNN (sb, st)	0%	-7%	-2%	27%	88%	FineTunedCNN (sb, st)	0%	-26%	-20%	10%	45%

FIG. 15

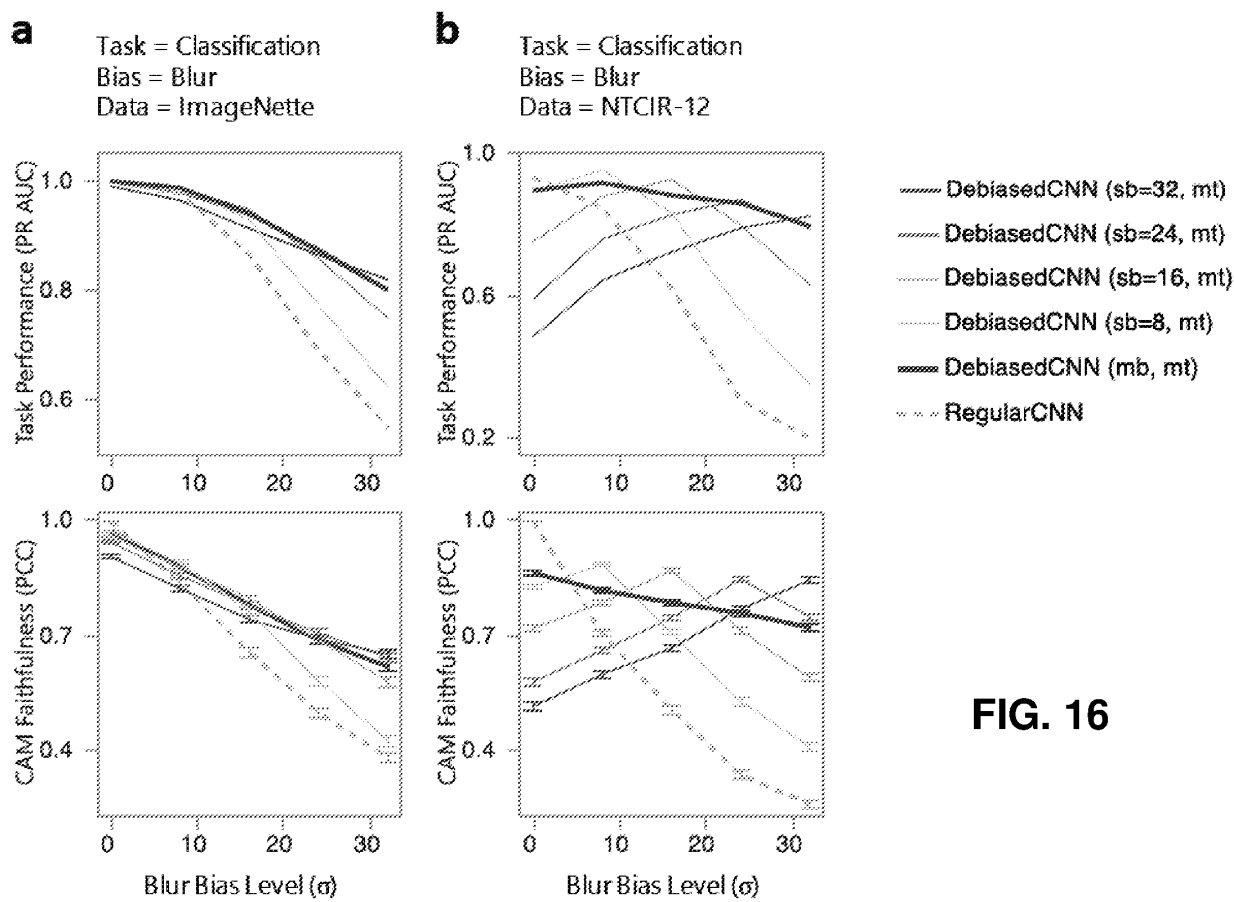


FIG. 16

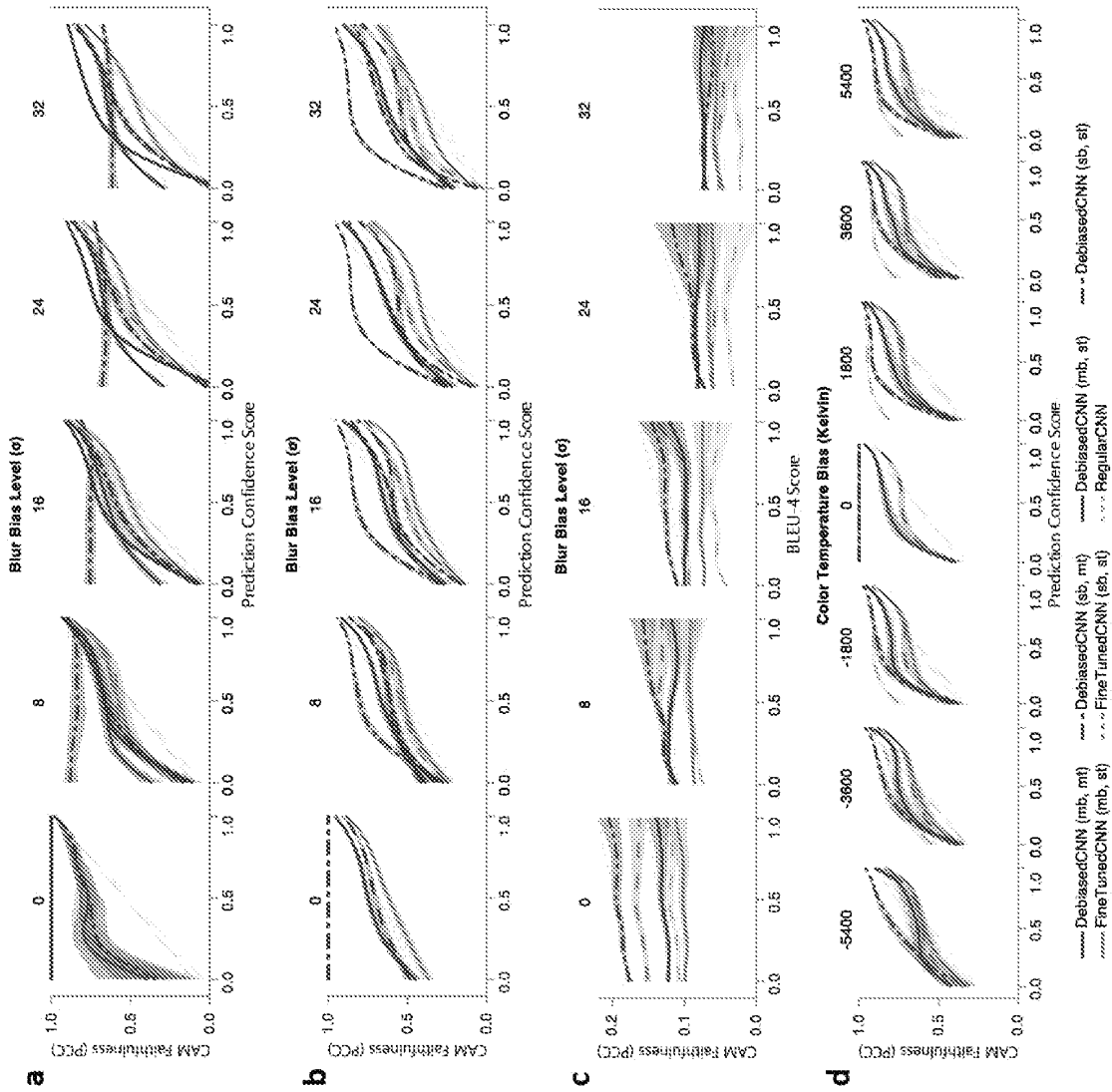


FIG. 17

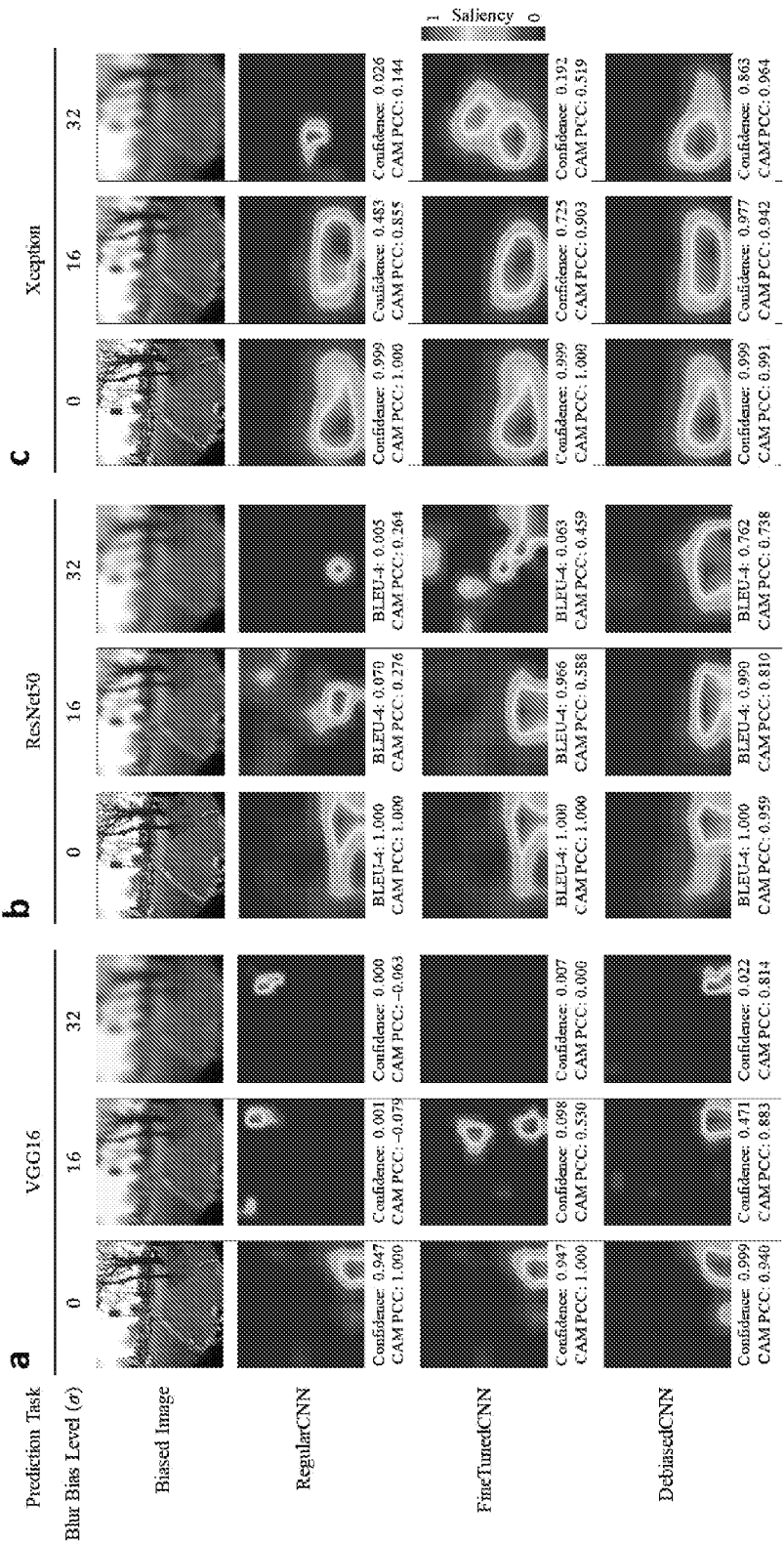


FIG. 18

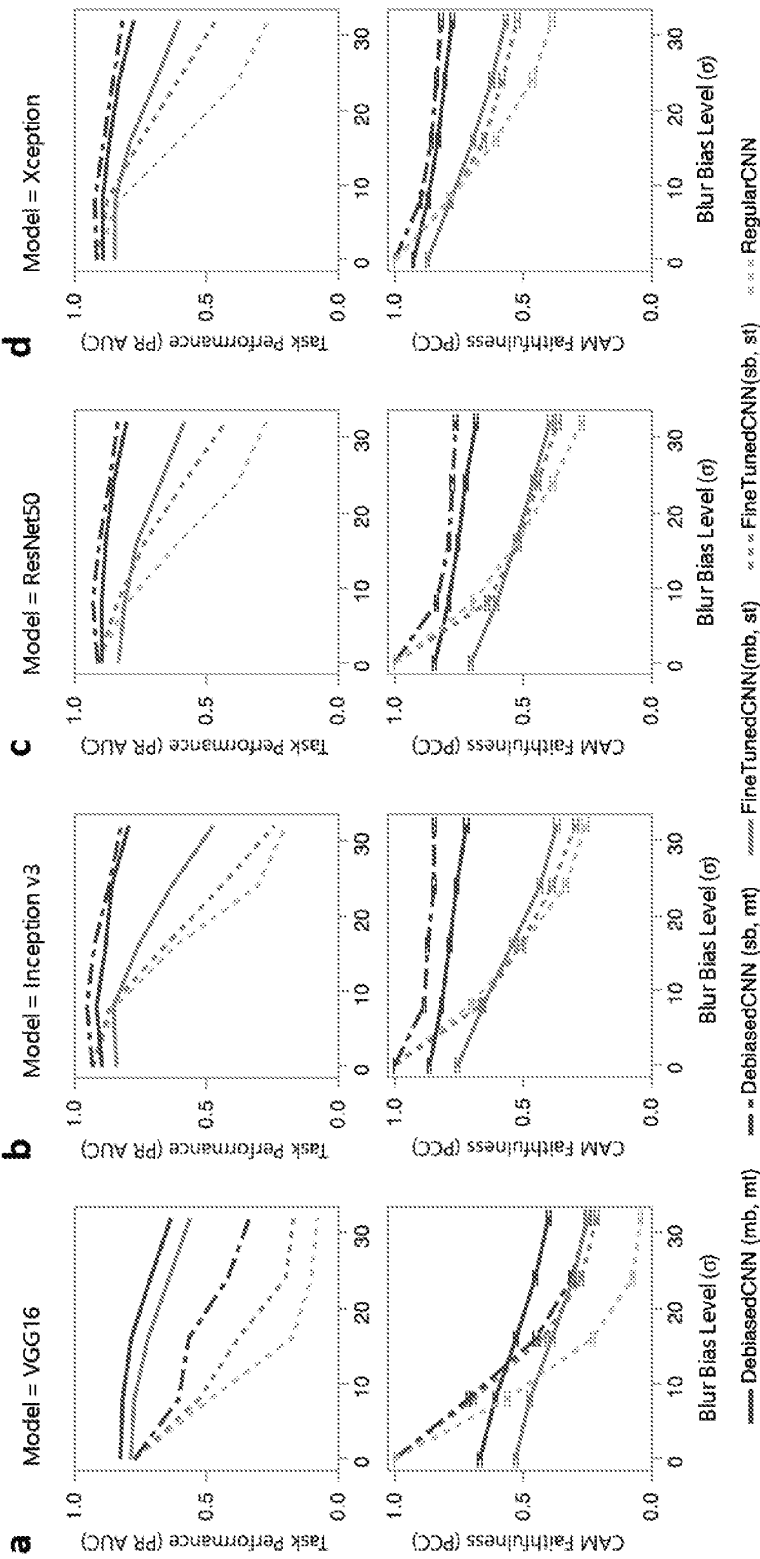
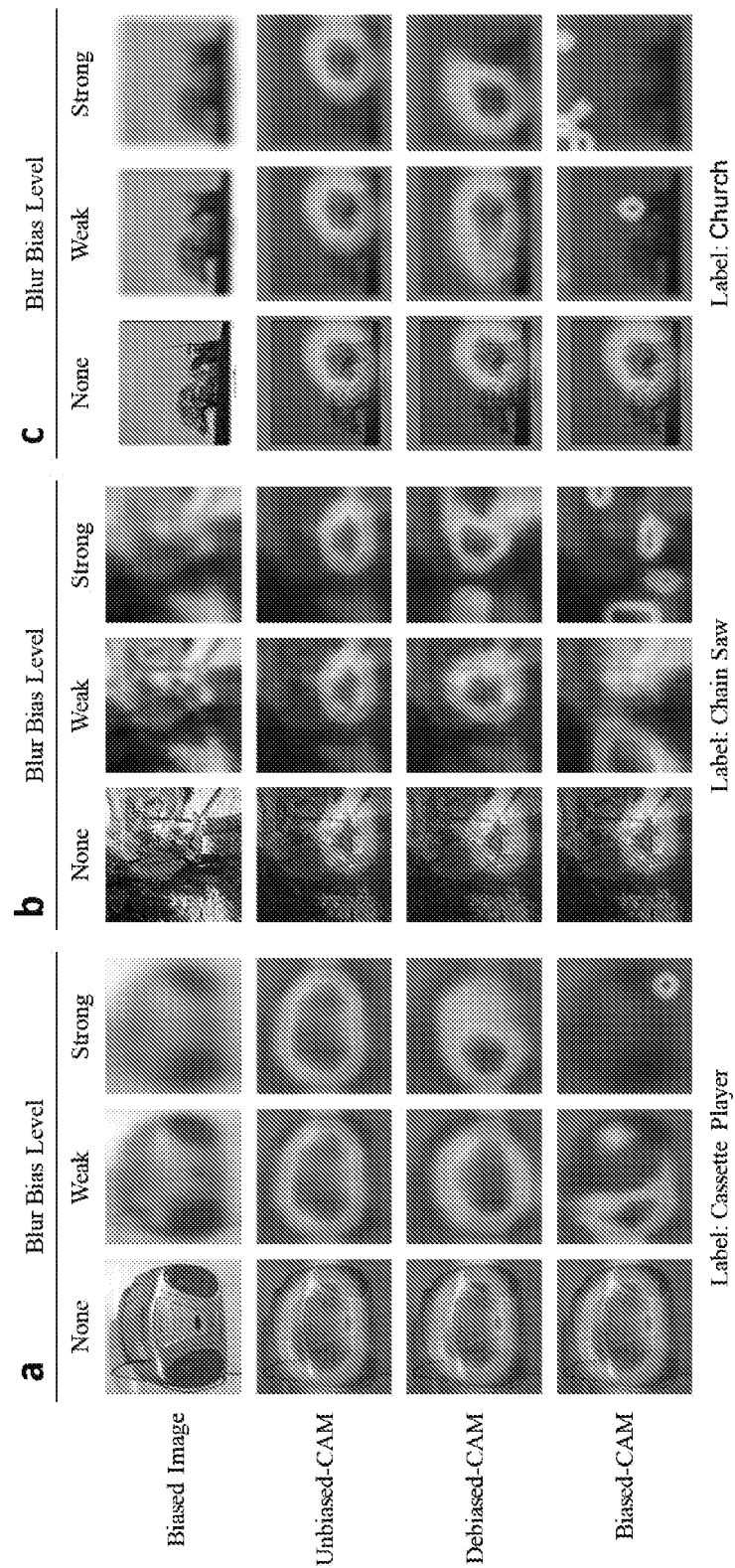
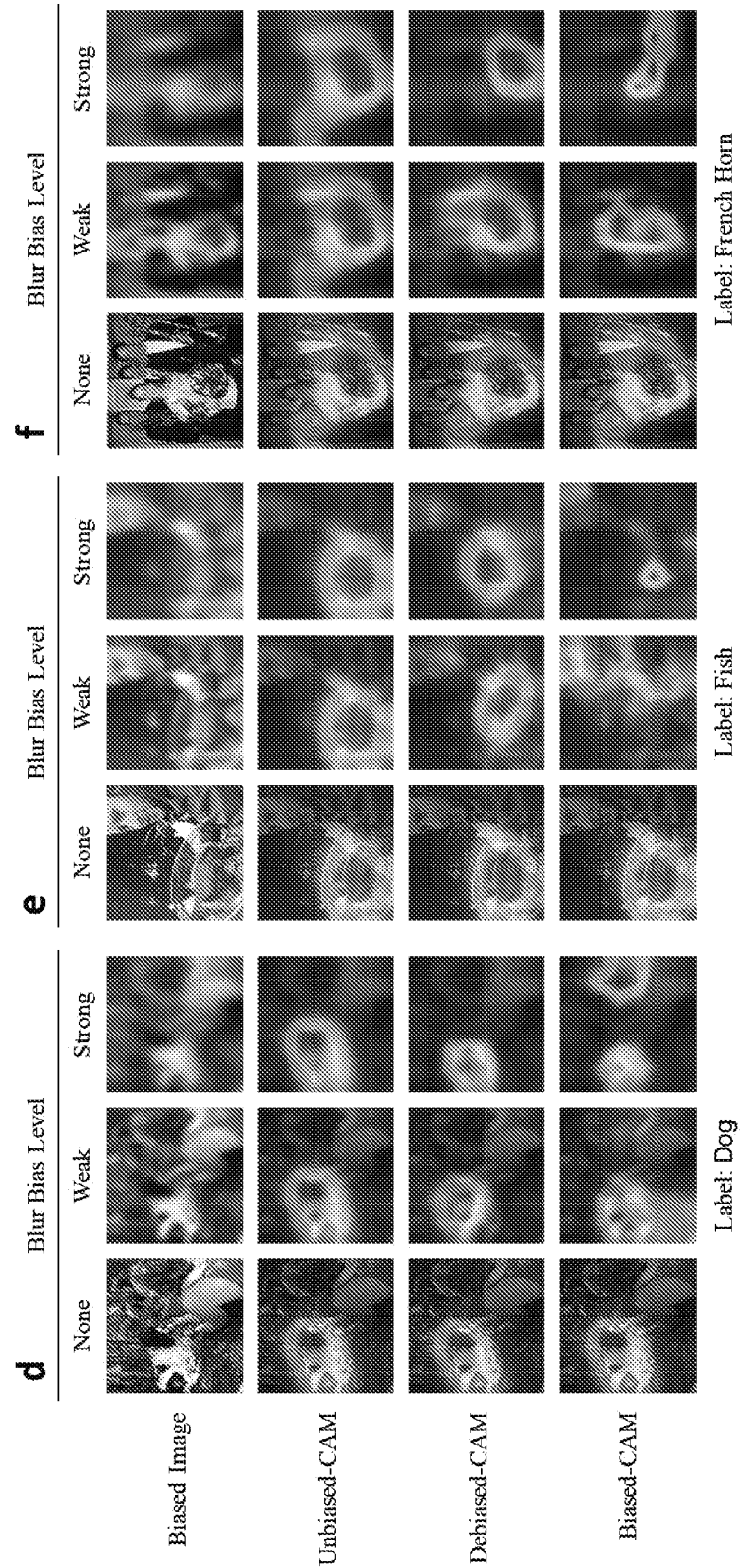


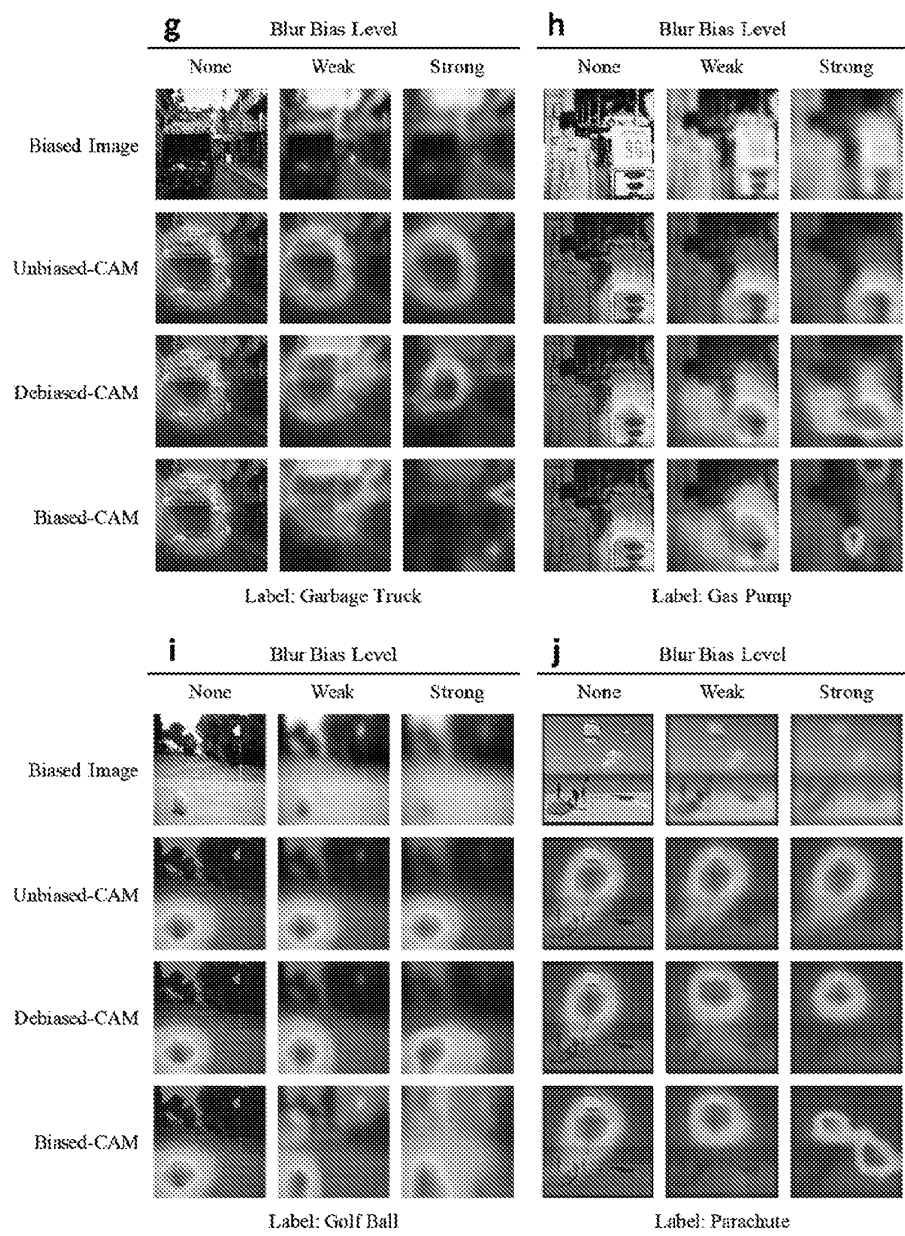
FIG. 19



Figs. 20a-c



Figs. 20d-f



Figs. 20g-j

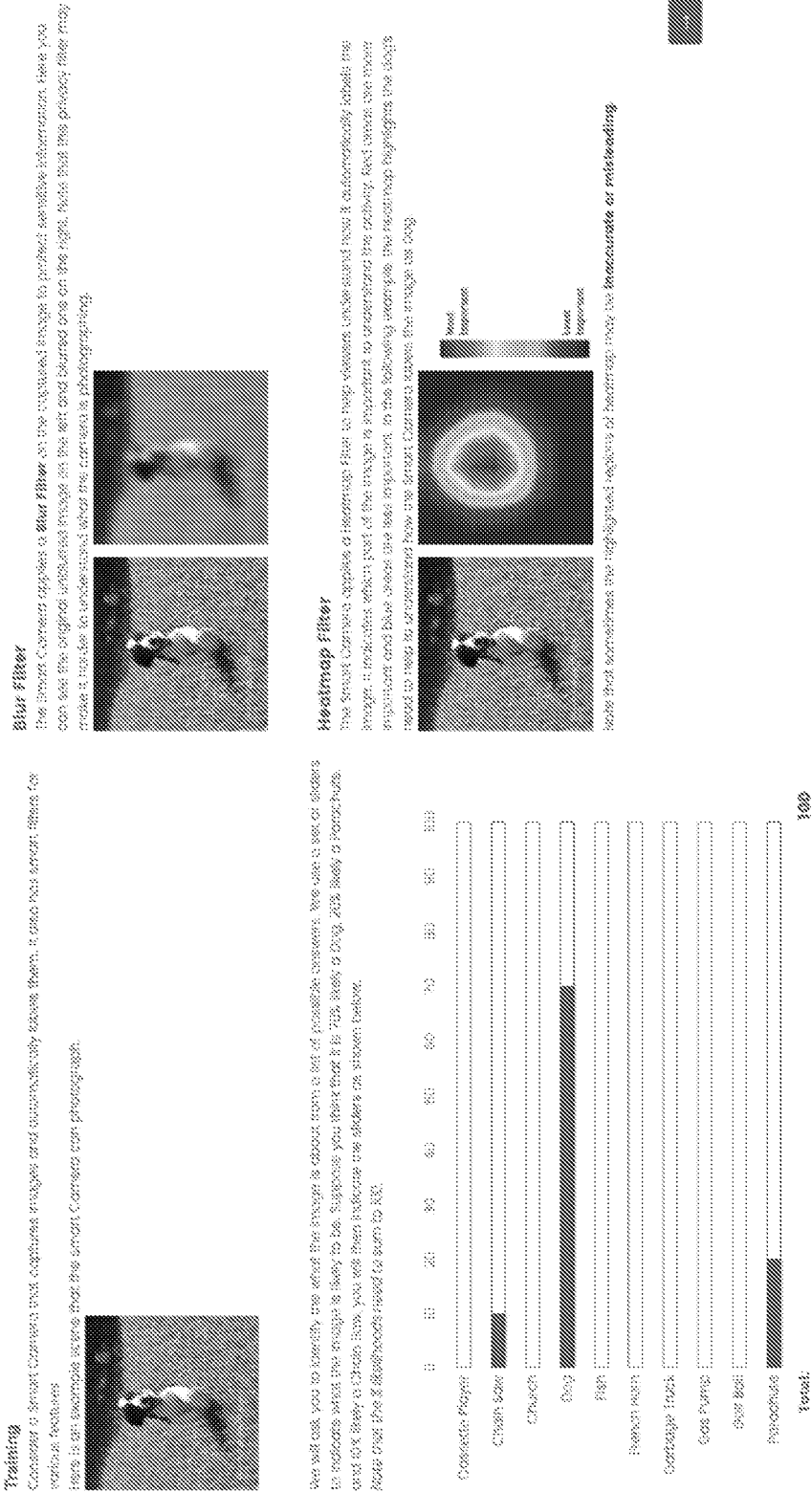
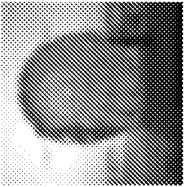


FIG. 21

Warm-up: Screening questions

You need to answer the following questions correctly to qualify for the main survey.

What is this image about?



☐ Church

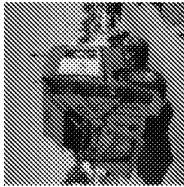
☐ Dog

☐ Fish

☐ Carriage track

☐ Warehouse

Which of the following gas canisters is *incorrect*?



☐ Church

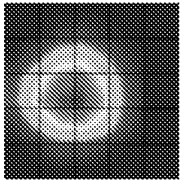
☐ Dog

☐ Fish

☐ Carriage track

☐ Warehouse

There is a different image. According to the *transparency score*, which gas canister is most transparent?



☐ Church

☐ Dog

☐ Fish

☐ Carriage track

☐ Warehouse

Here, stick on the low region. You need to select the lowest one but *not* the lowest one.

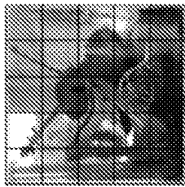


FIG. 22

Congratulations! On to main survey

Congratulations! You have correctly completed the tutorial questions.

Please tell us a little about yourself.

Do you agree or disagree with the following statements?

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
I consider myself as a technology-savvy person.	☐	☐	☐	☐	☐	☐	☐
I have no problem understanding photographs.	☐	☐	☐	☐	☐	☐	☐

Next, you will see a series 10 of images and answer several questions for each image.

Important: Please answer questions carefully. We may have to reject your work if you fail any attention test, or give inconsistent, repeatedly identical or seemingly random answers.



FIG. 23

This image shows a *dog* which is used to identify the image content. Each pixel of the image is *not* used to identify the image content. Each pixel is used to identify the image content.

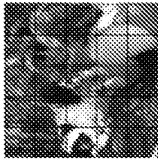
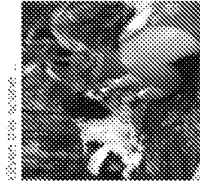
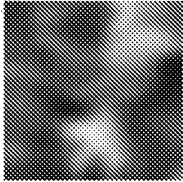


FIG. 24a

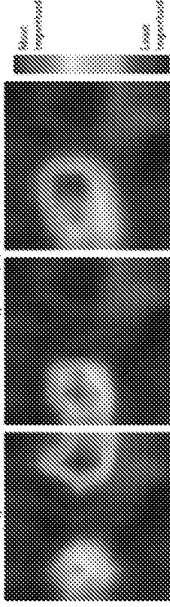


This image shows a *dog* which is used to identify the image content.



This image shows a *dog* which is used to identify the image content.

This image shows a *dog* which is used to identify the image content.



This image shows a *dog* which is used to identify the image content.



This image shows a *dog* which is used to identify the image content.

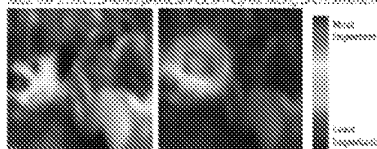


FIG. 24b



Section 4

the two different basic image formats, instead this is done as they are generated in response to a request with part of the image is requested by a streaming library; thus, the client can only see the part of the image he requests and the server can be flexible.



Abstract

Abstract

Category	Percentage
Customizable Platform	100%
OpenAPI: Basic	100%
OpenAPI: Full	100%
Comp.	100%
SaaS	100%
Standardization	100%
OpenAPI: Full	100%
OpenAPI: Basic	100%
Full API	100%
Self-API	100%
OpenAPI: Full	100%
OpenAPI: Basic	100%
Others	100%

From the two representatives the knowledge of using the image (two faces) represents the correct representation.

Score: Stars:

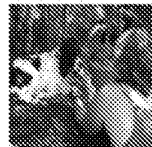
Representations of vectors $\mathbf{v}$ through the homomorphism α represent values of the tensor, the part $\alpha(\mathbf{v})$ of the tensor that $\mathbf{v}$ contributes to the total. For each representation $\alpha(\mathbf{v})$

- ☐ Strongly agree
- ☐ Agree
- ☐ Somewhat agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree

Excluding any year in which the incidence is thought to not be high is likely to create a selection effect.

Figure 4

Figure 1. Research design: the two-group design.



South from the first observation point toward the bridge labeled the bridge as long and spanned a distance of 100 yards with part of the distance traversed by an auxiliary bridge.

.....



These are two **representative** (representative is for standing one thing, (not been) representative, sharing; representative

Star Spangled  

the position of whether you judge that item as *not* representative of the series, or you agree or disagree that the response was *beneficial* for you in taking the survey?

- ☐ Strongly agree
- ☐ Agree
- ☐ Somewhat agree
- ☐ Neither agree nor disagree
- ☐ Somewhat disagree
- ☐ Disagree
- ☐ Strongly disagree

Copyright © 2006 by John Wiley & Sons, Inc.

FIG. 25a

FIG. 25b

a					
#	Response	Linear Effects Model (Participant as random effect)	F	p>F	R ²
q1	CAM Truthfulness Selection (PCC)	Blur Bias Level +	55.2	<.0001	.554
		CAM Type +	87.4	<.0001	
		Blur Bias Level × CAM Type	23.9	<.0001	
		Trial Number	66.4	<.0001	
q2	CAM Truthfulness Rating	Blur Bias Level +	121.9	<.0001	.532
		CAM Type +	181.0	<.0001	
		Blur Bias Level × CAM Type	55.7	<.0001	
		Trial Number	7.1	<.0001	
b					
#	Response	Linear Effects Model (Participant as random effect)	F	p>F	R ²
q1a	Labeling Confidence	Blur Bias Level +	134.4	<.0001	.487
		CAM Type +	3.5	.0301	
		Bias Level × CAM Type	1.7	n.s.	
		Trial Number	0.9	n.s.	
q1b	Labeling Correctness	Blur Bias Level +	44.0	<.0001	.308
		CAM Type +	3.3	.0392	
		Bias Level × CAM Type	1.6	n.s.	
		Trial Number	0.9	n.s.	
q2,3	CAM Truthfulness Rating	Blur Bias Level +	247.2	<.0001	.460
		CAM Type +	128.9	<.0001	
		Blur Bias Level × CAM Type	25.2	<.0001	
		Unblurred Disclosure	10.4	.0013	
		Unblurred Disclosure × Blur Bias Level	5.1	.0062	
		Unblurred Disclosure × CAM Type	3.8	.0230	
		Unblurred Disclosure × Blur Bias Level × CAM Type	3.2	.0118	
		Trial Number	0.8	n.s.	
q3,6	CAM Helpfulness Rating	Blur Blur Bias Level +	137.6	<.0001	.391
		CAM Type +	91.7	<.0001	
		Blur Bias Level × CAM Type	23.9	<.0001	
		Unblurred Disclosure	3.1	n.s.	
		Unblurred Disclosure × Blur Bias Level	3.4	.0226	
		Unblurred Disclosure × CAM Type	1.3	n.s.	
		Unblurred Disclosure × Blur Bias Level × CAM Type	2.2	n.s.	
		Trial Number	1.6	n.s.	

FIG. 26

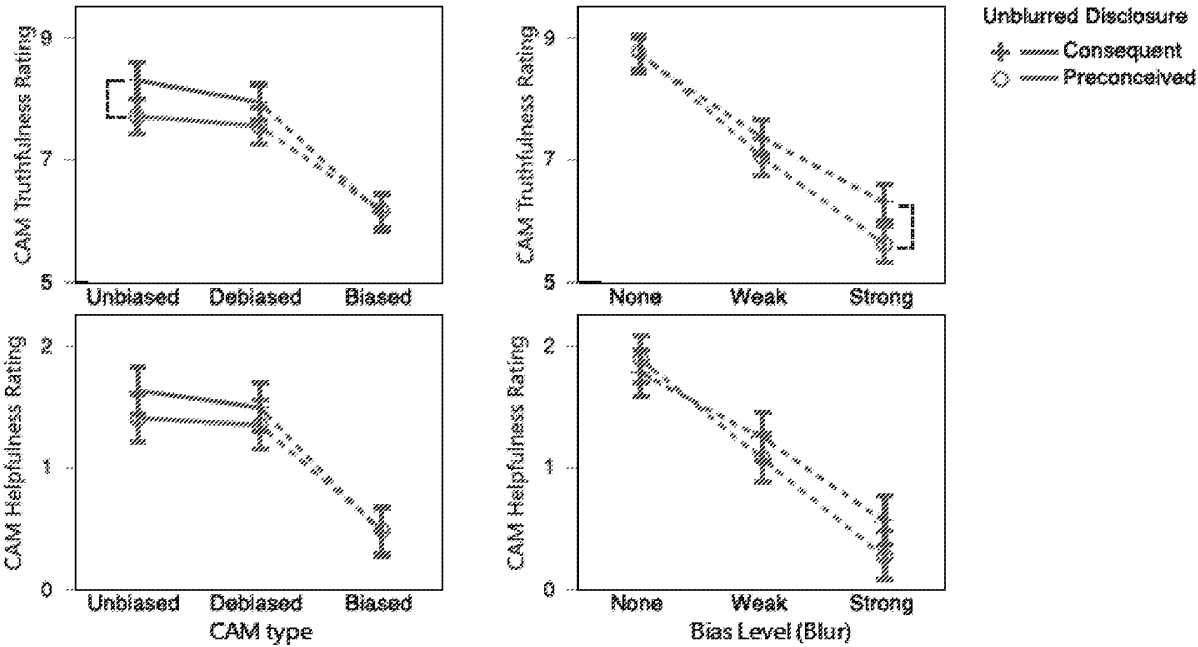


FIG. 27

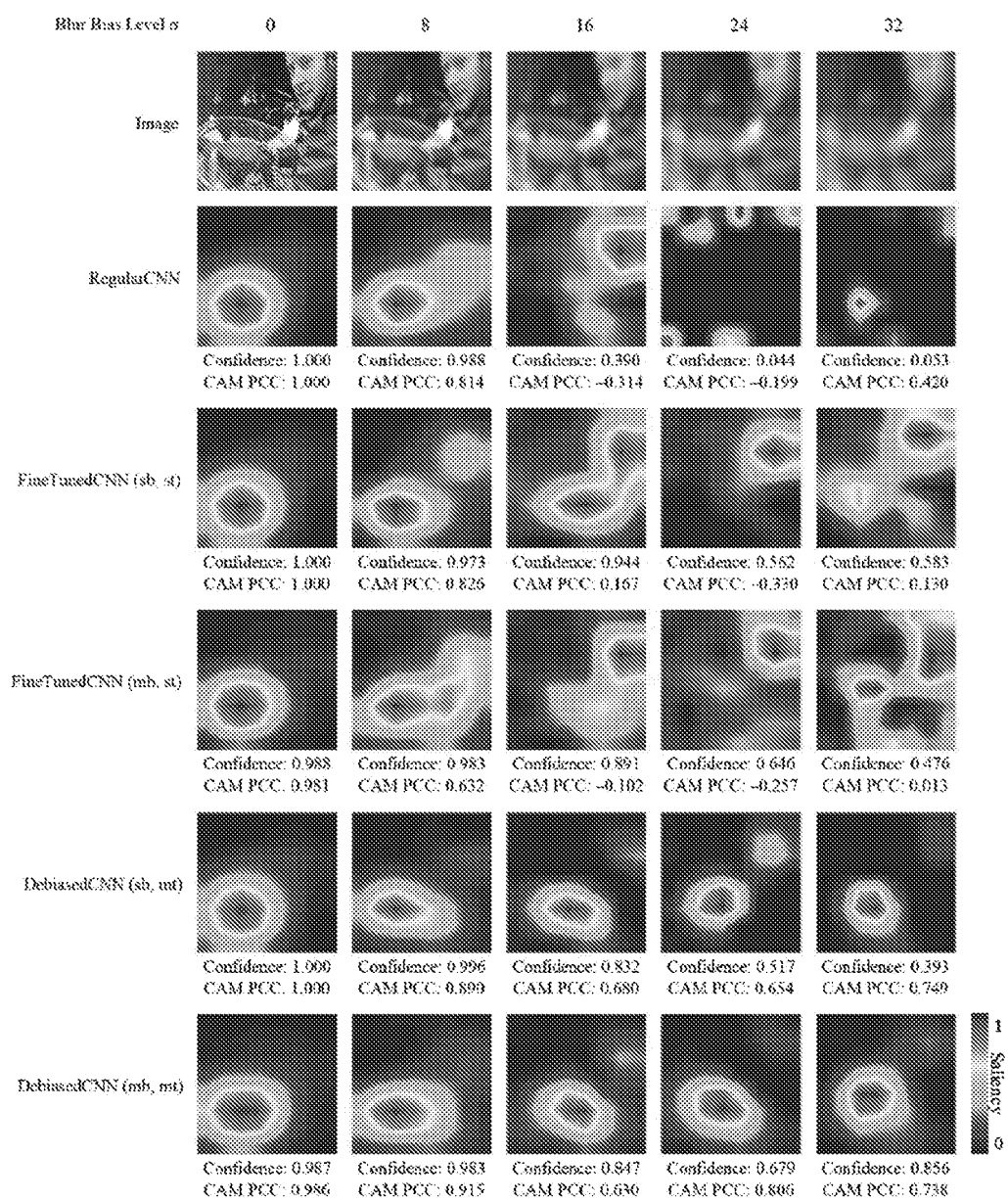


FIG. 28

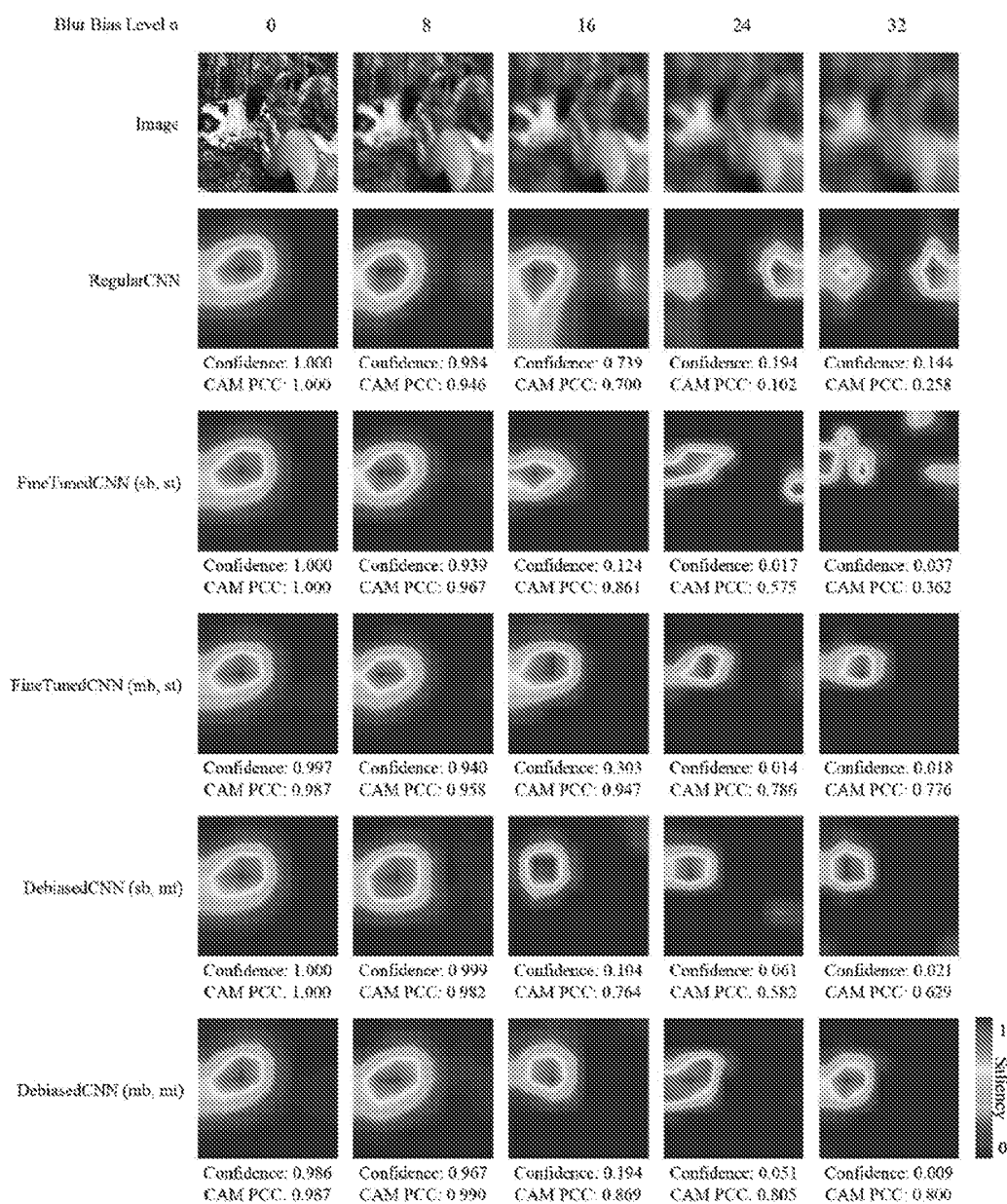


FIG. 29

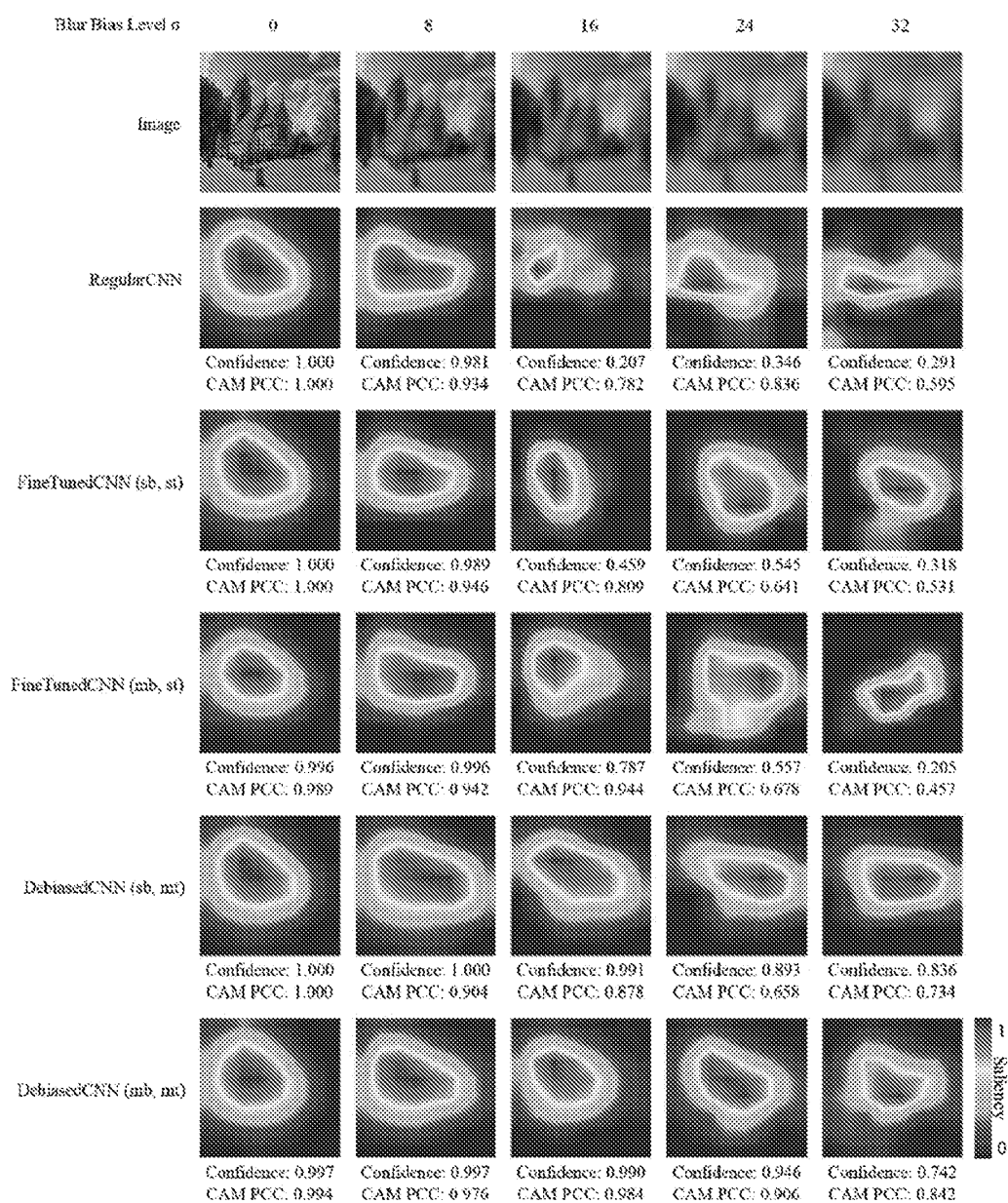


FIG. 30

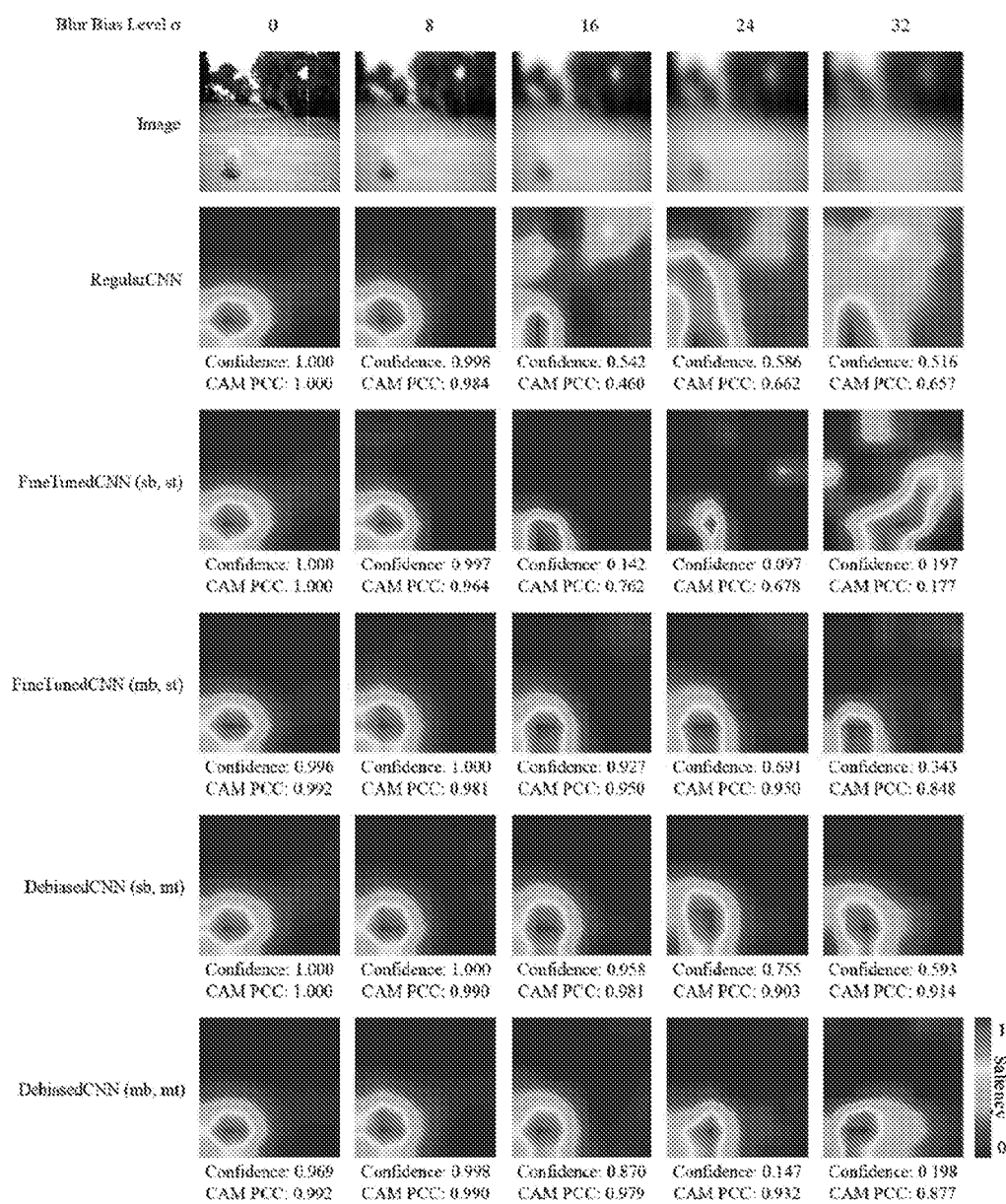


FIG. 31

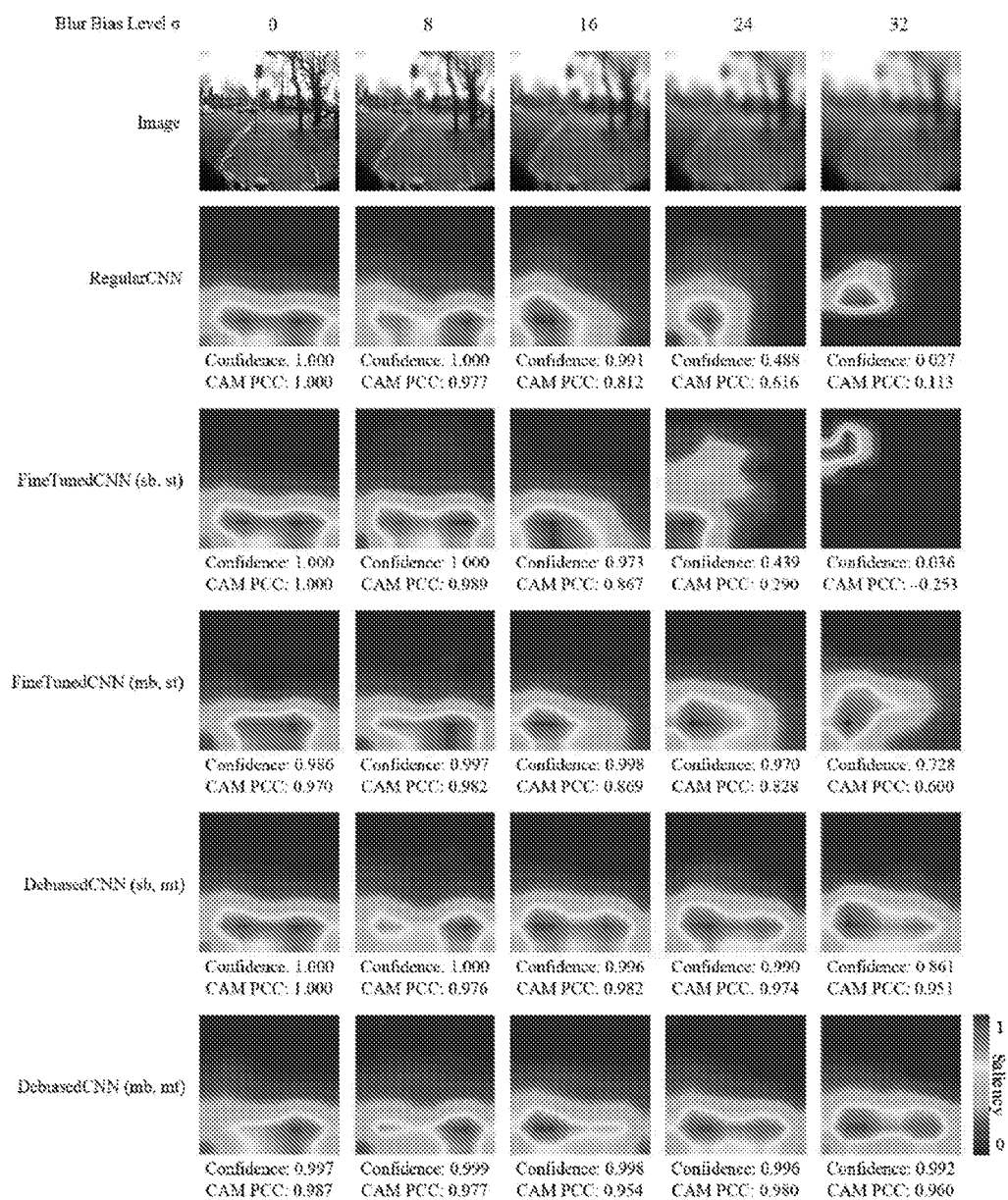


FIG. 32

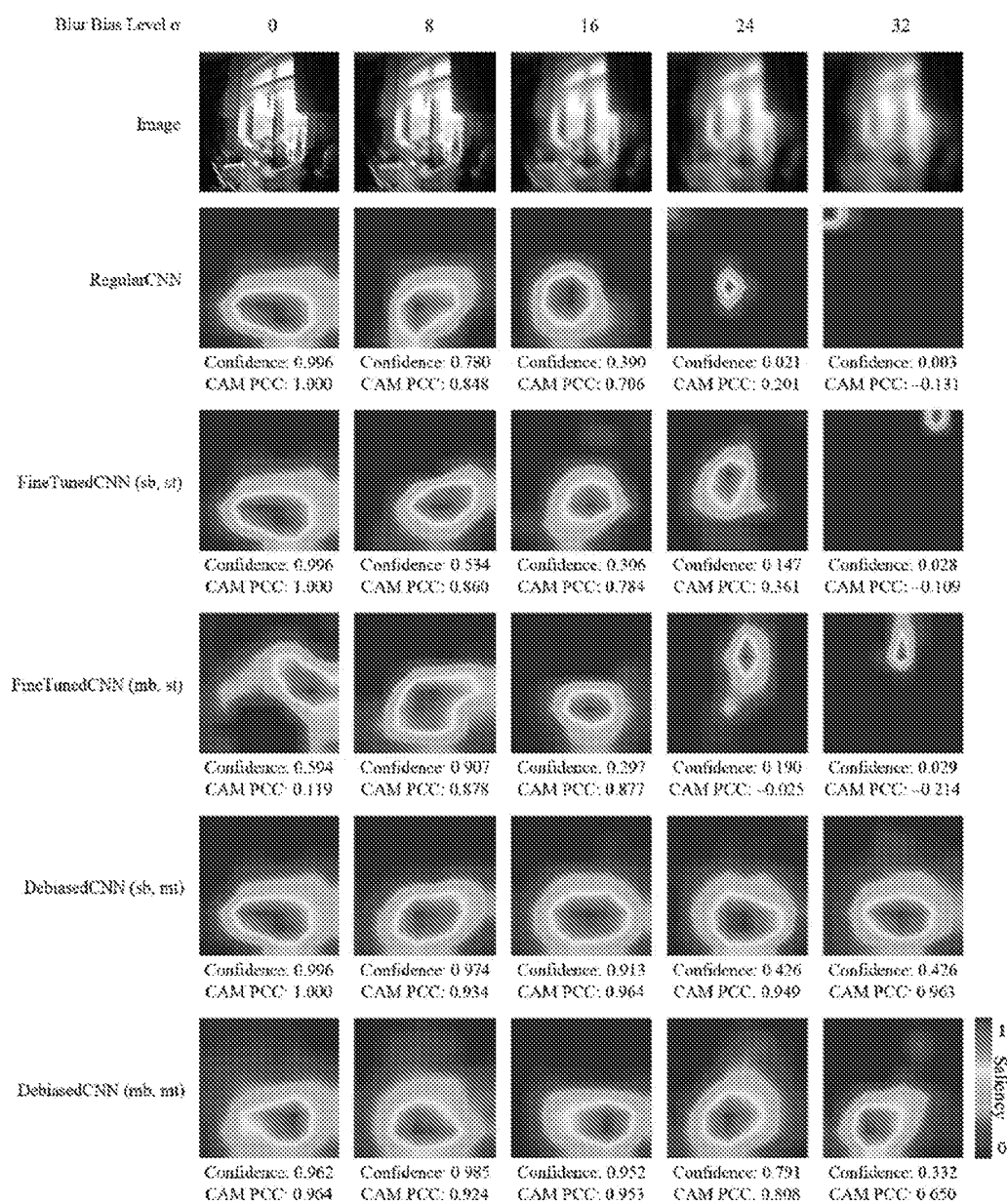


FIG. 33

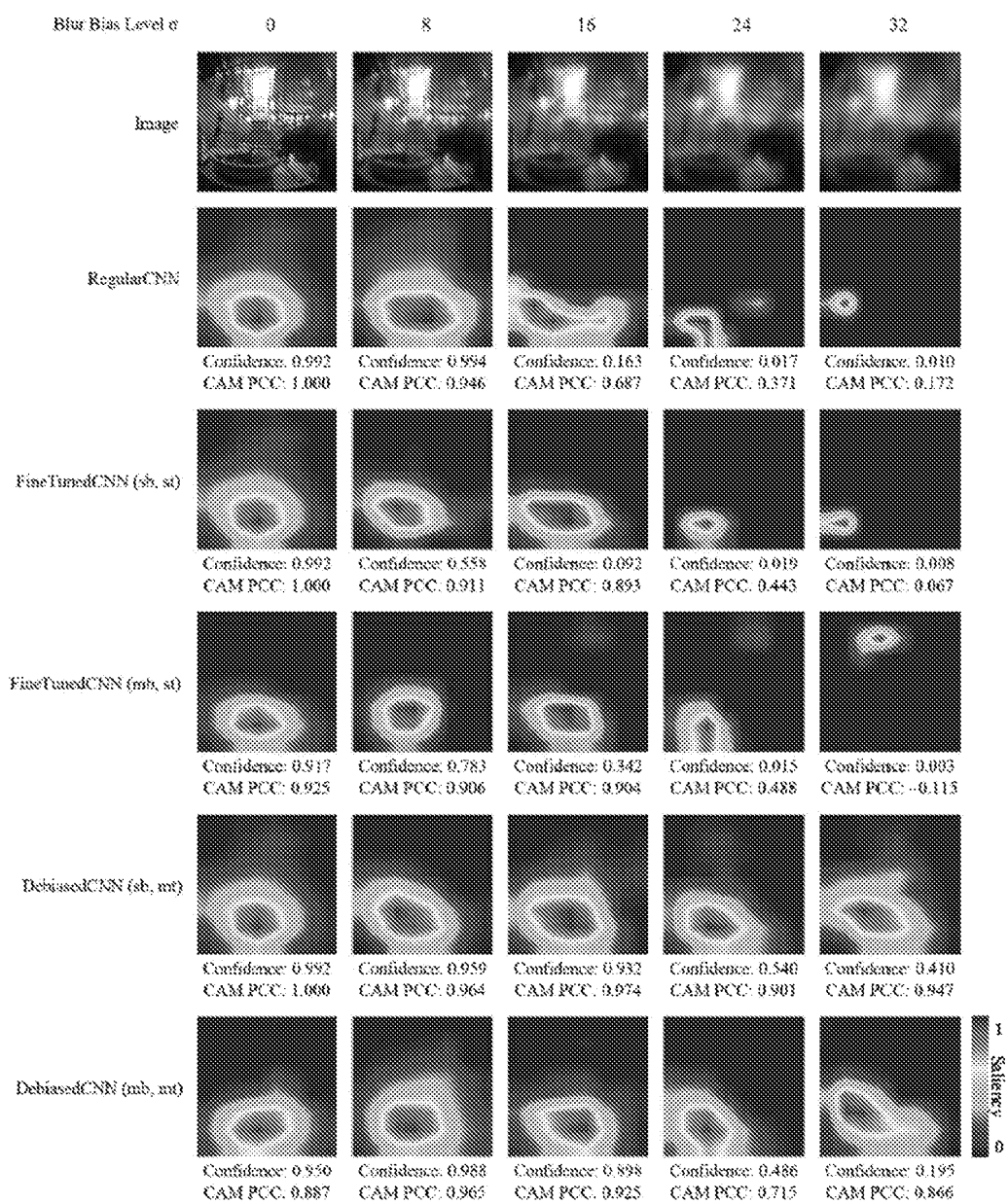


FIG. 34

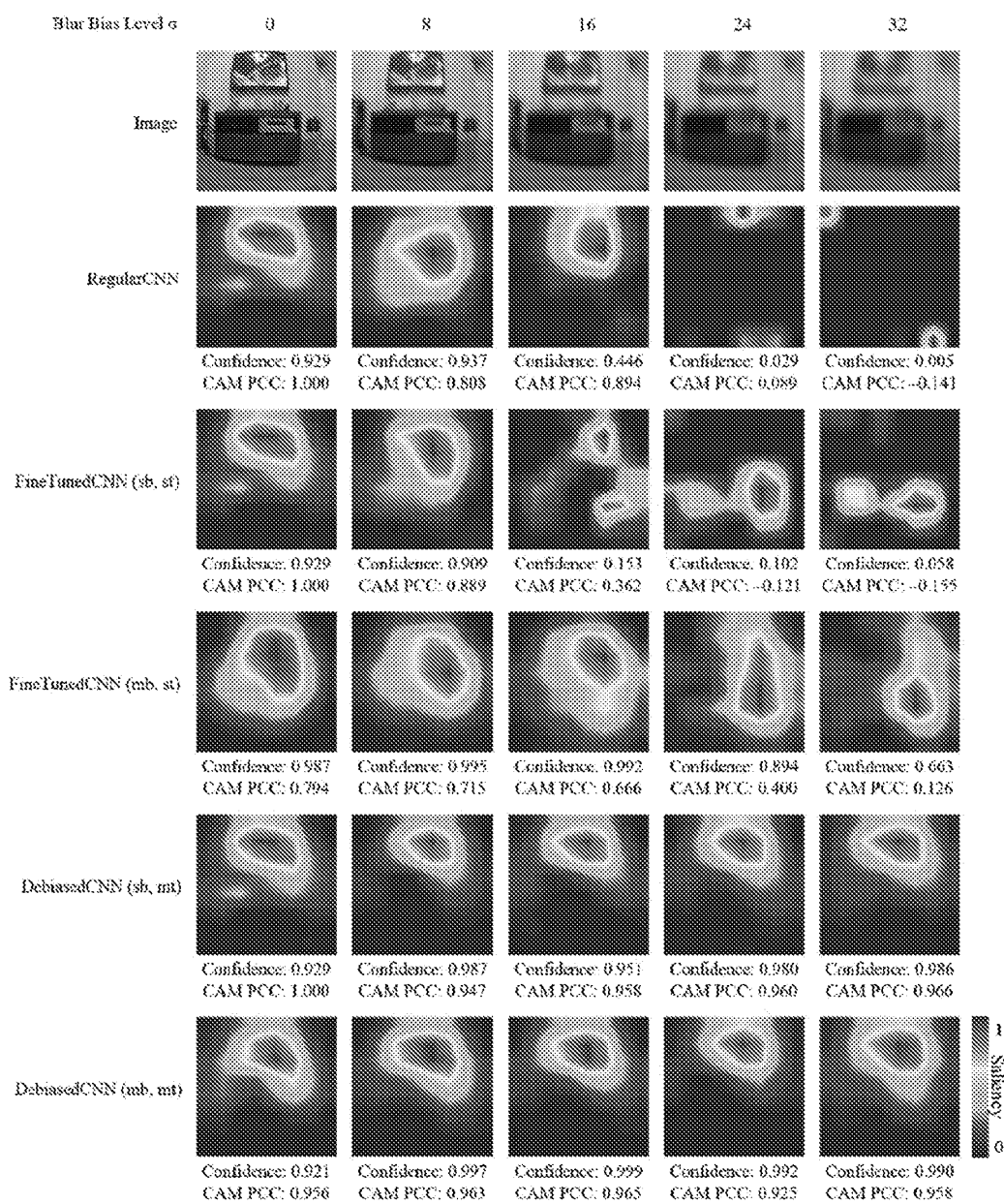


FIG. 35

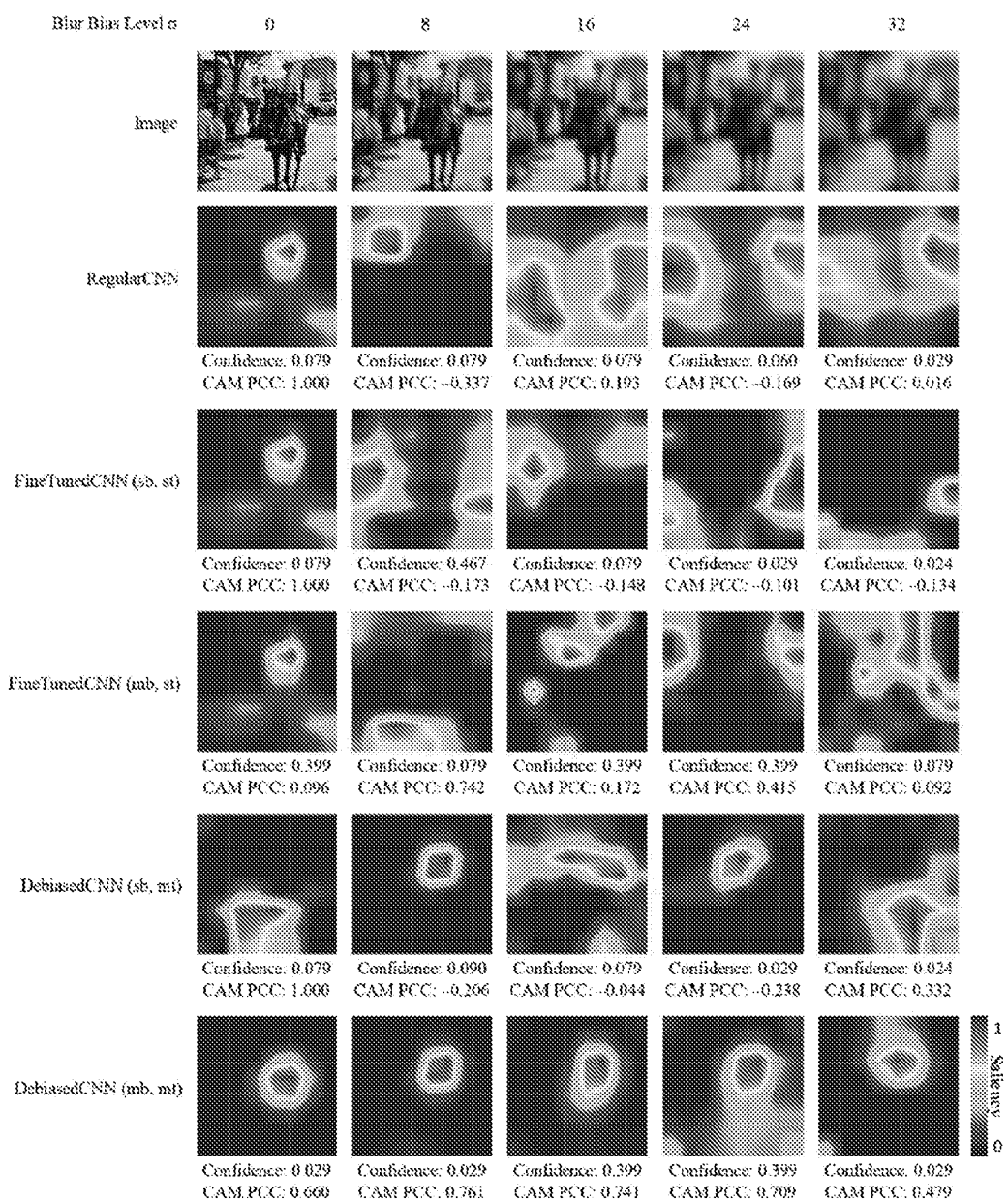


FIG. 36

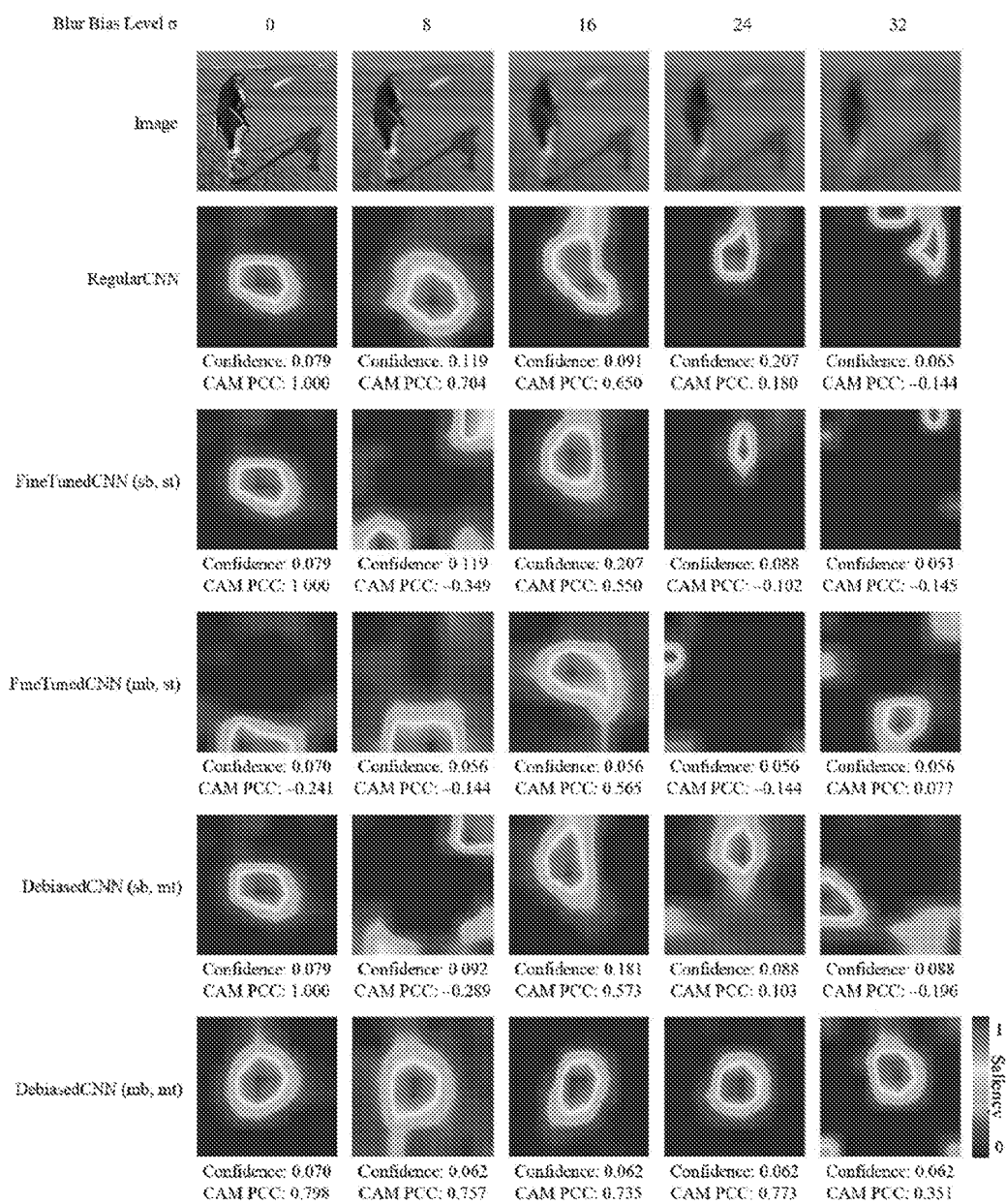


FIG. 37

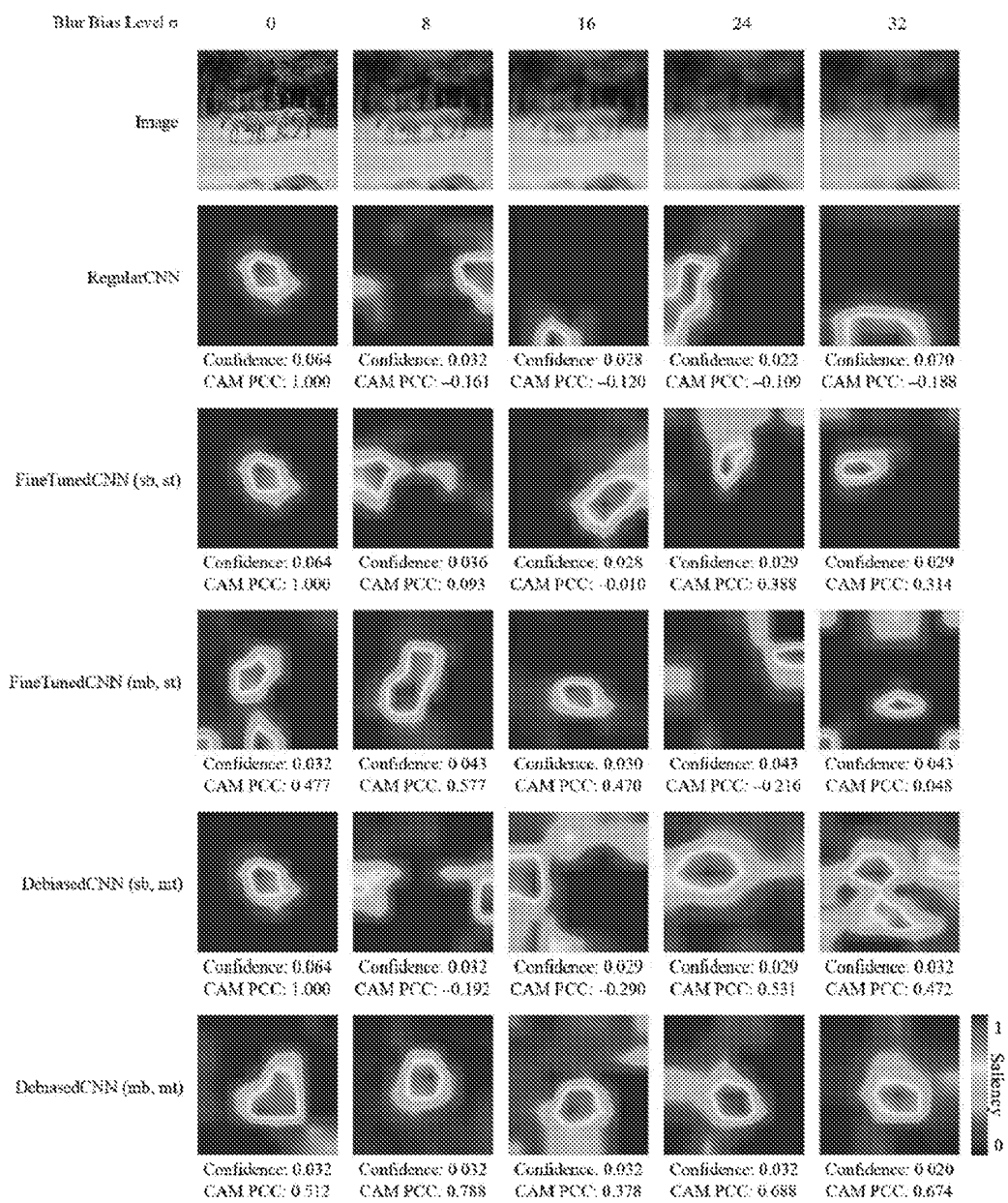


FIG. 38

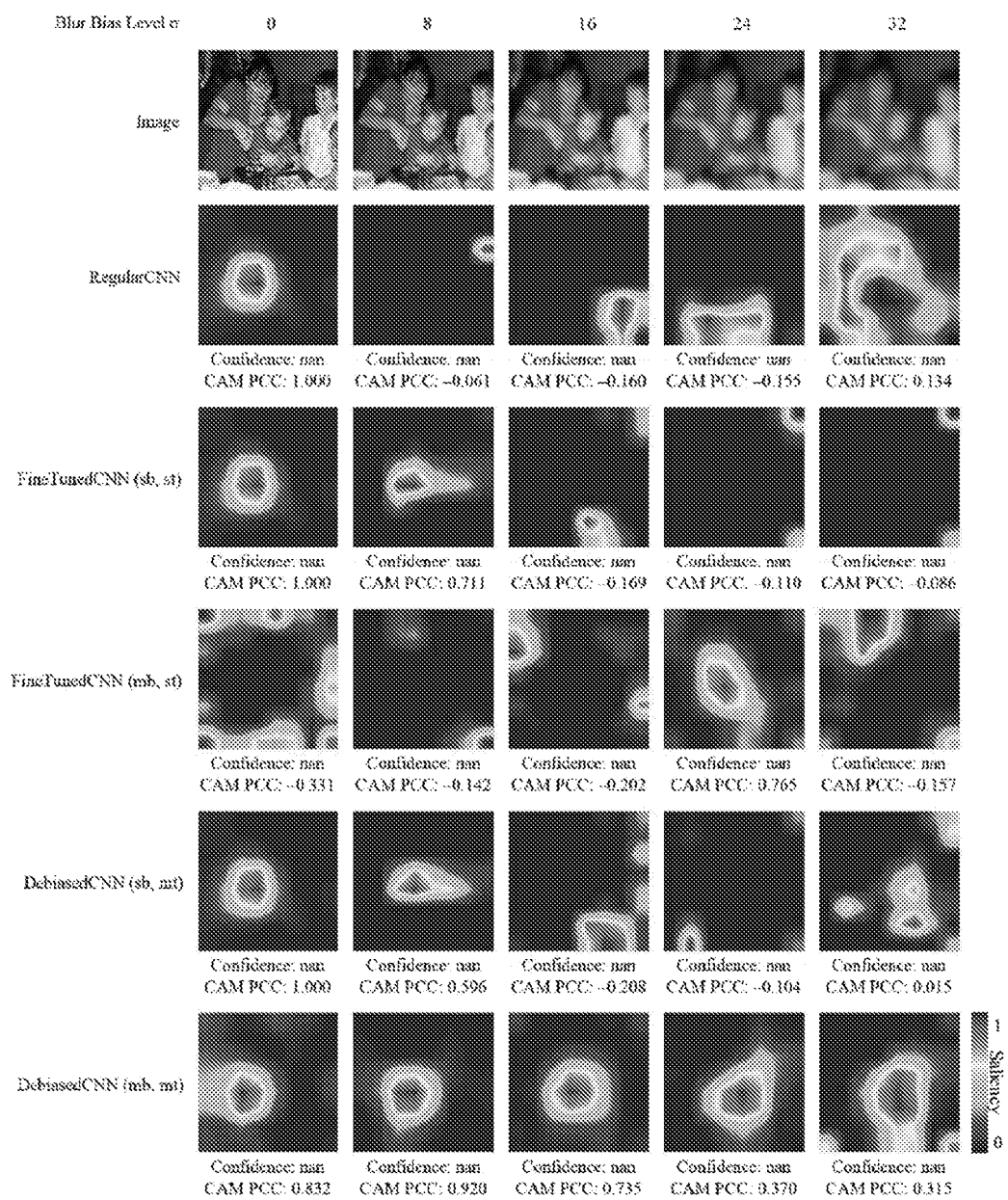


FIG. 39

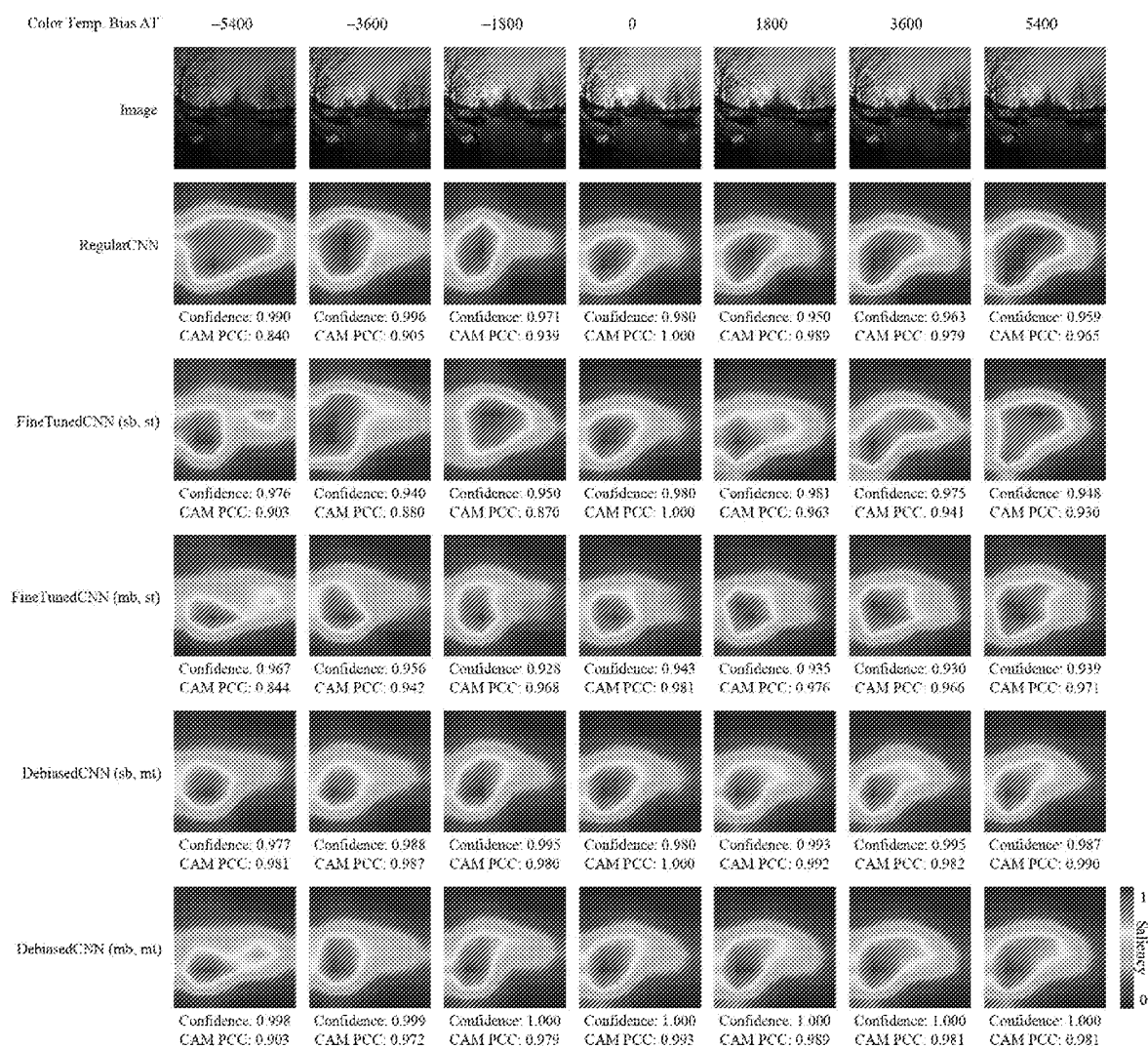


FIG. 40

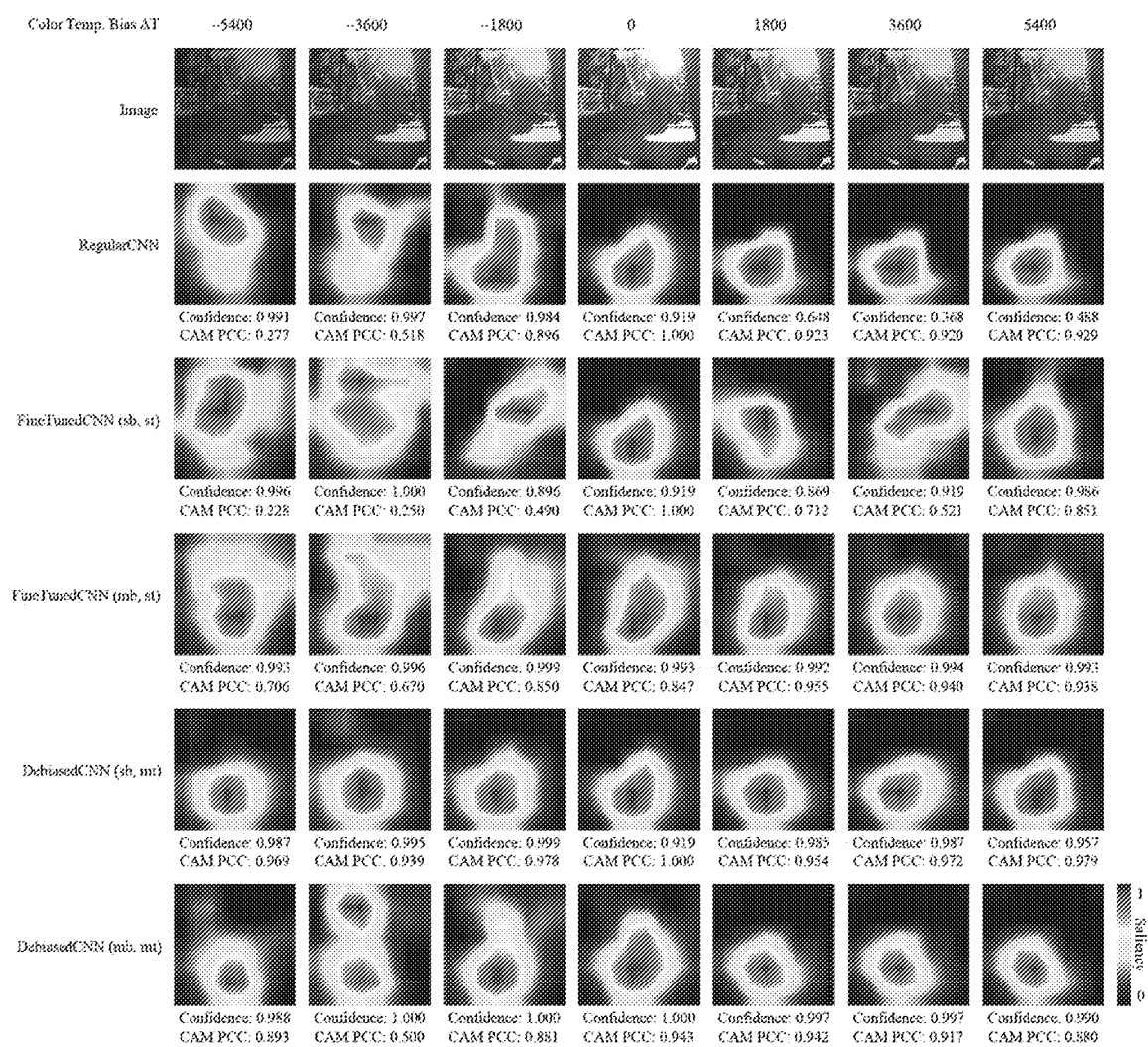


FIG. 41

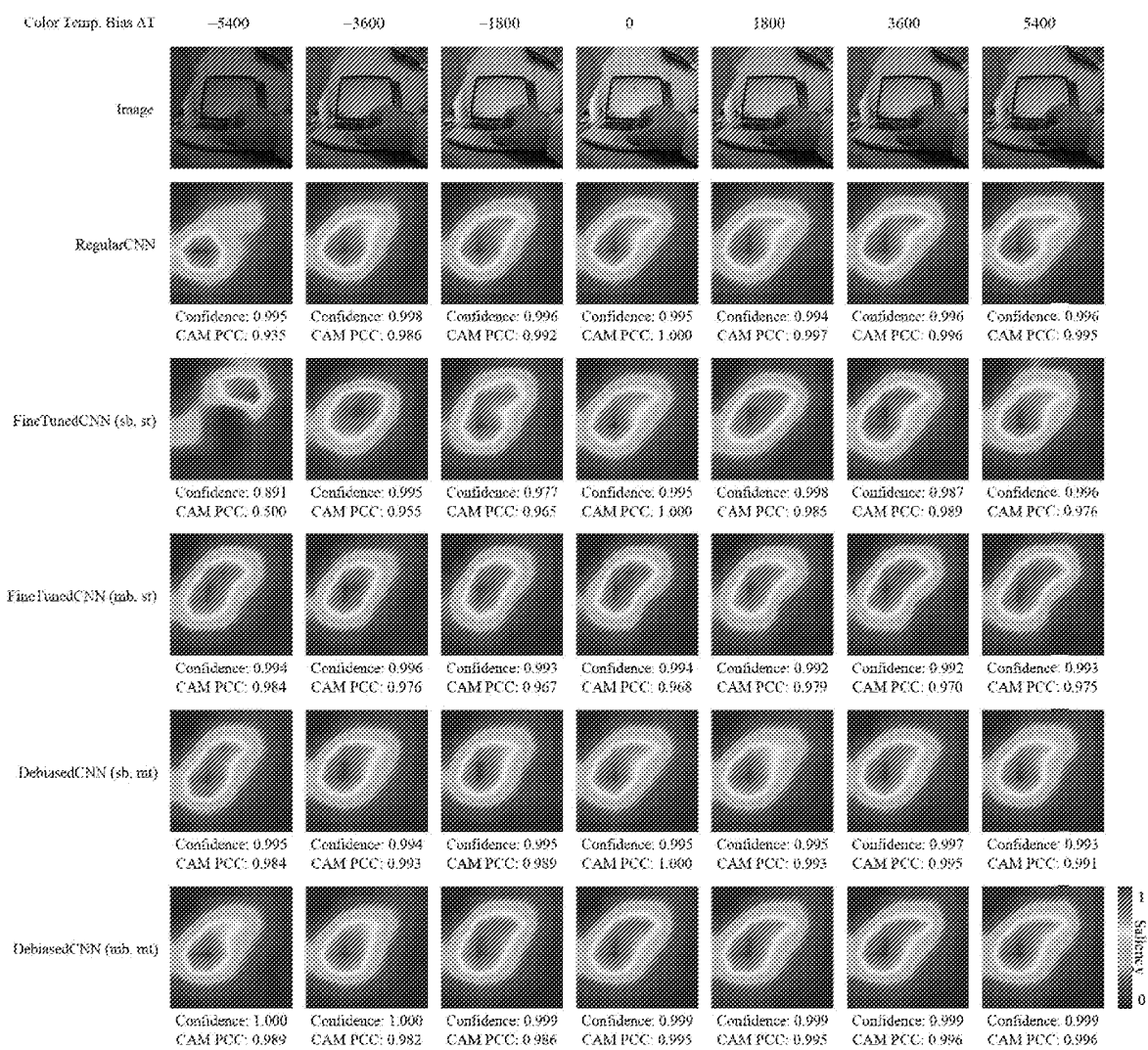


FIG. 42

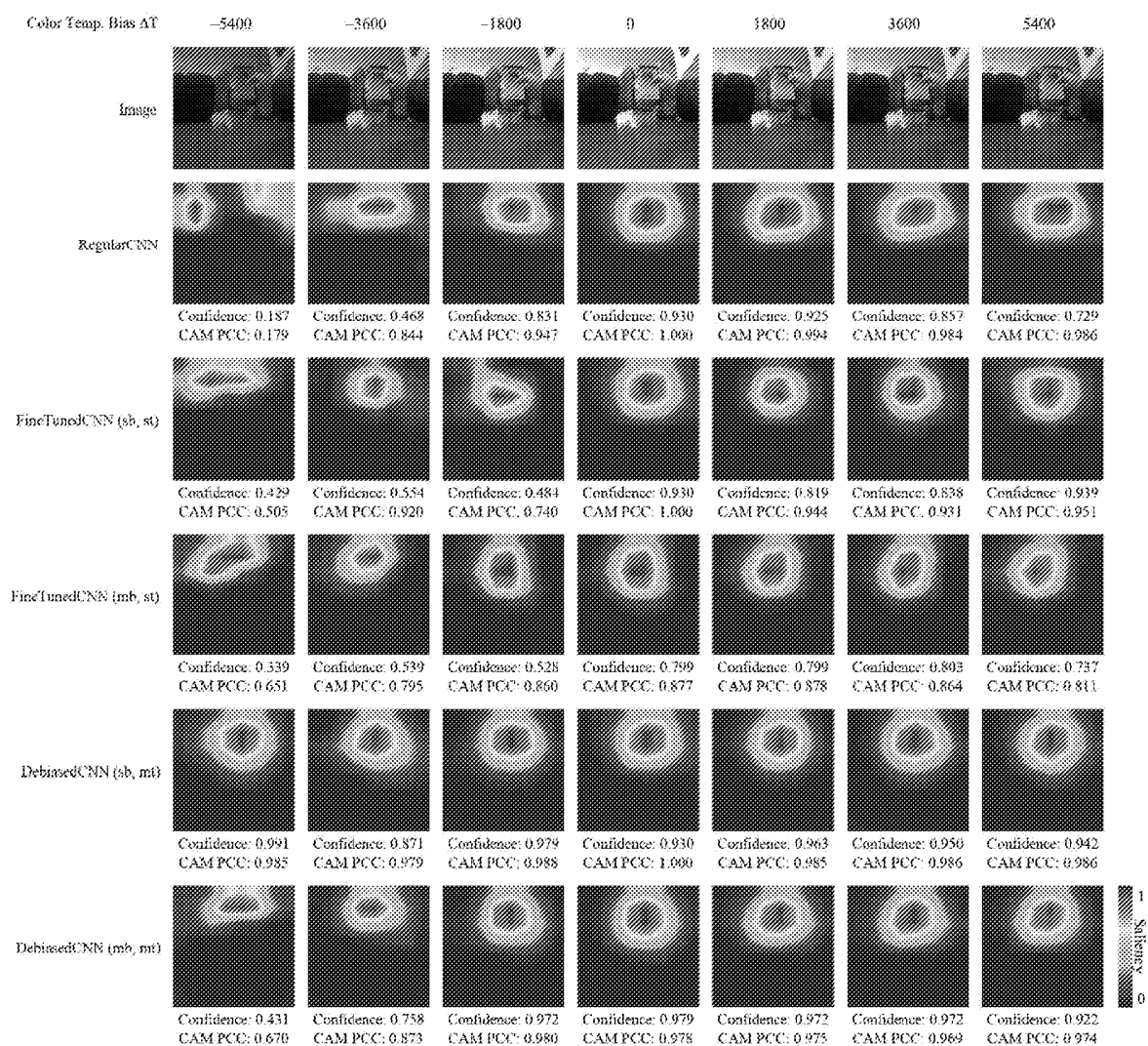


FIG. 43

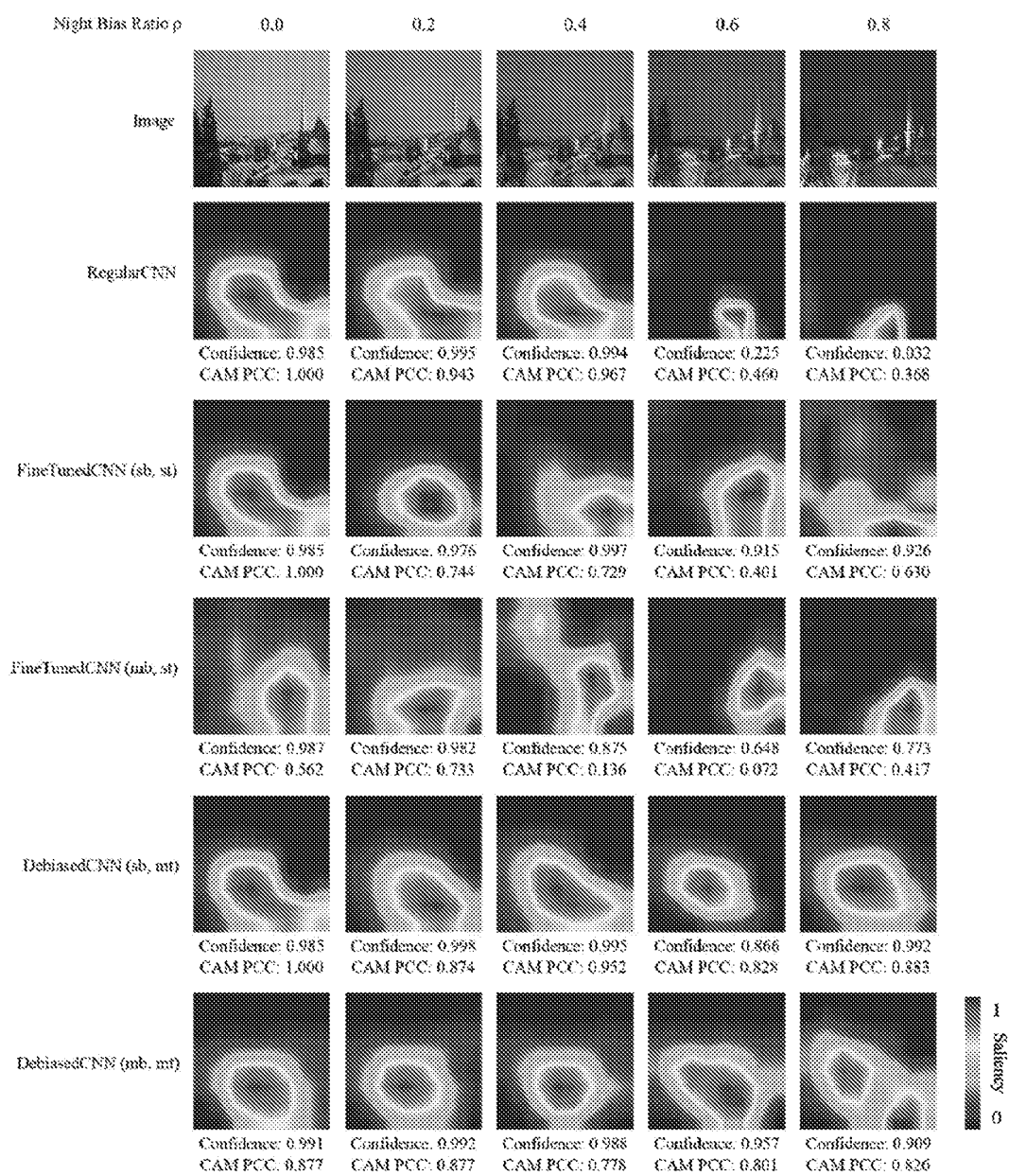


FIG. 44

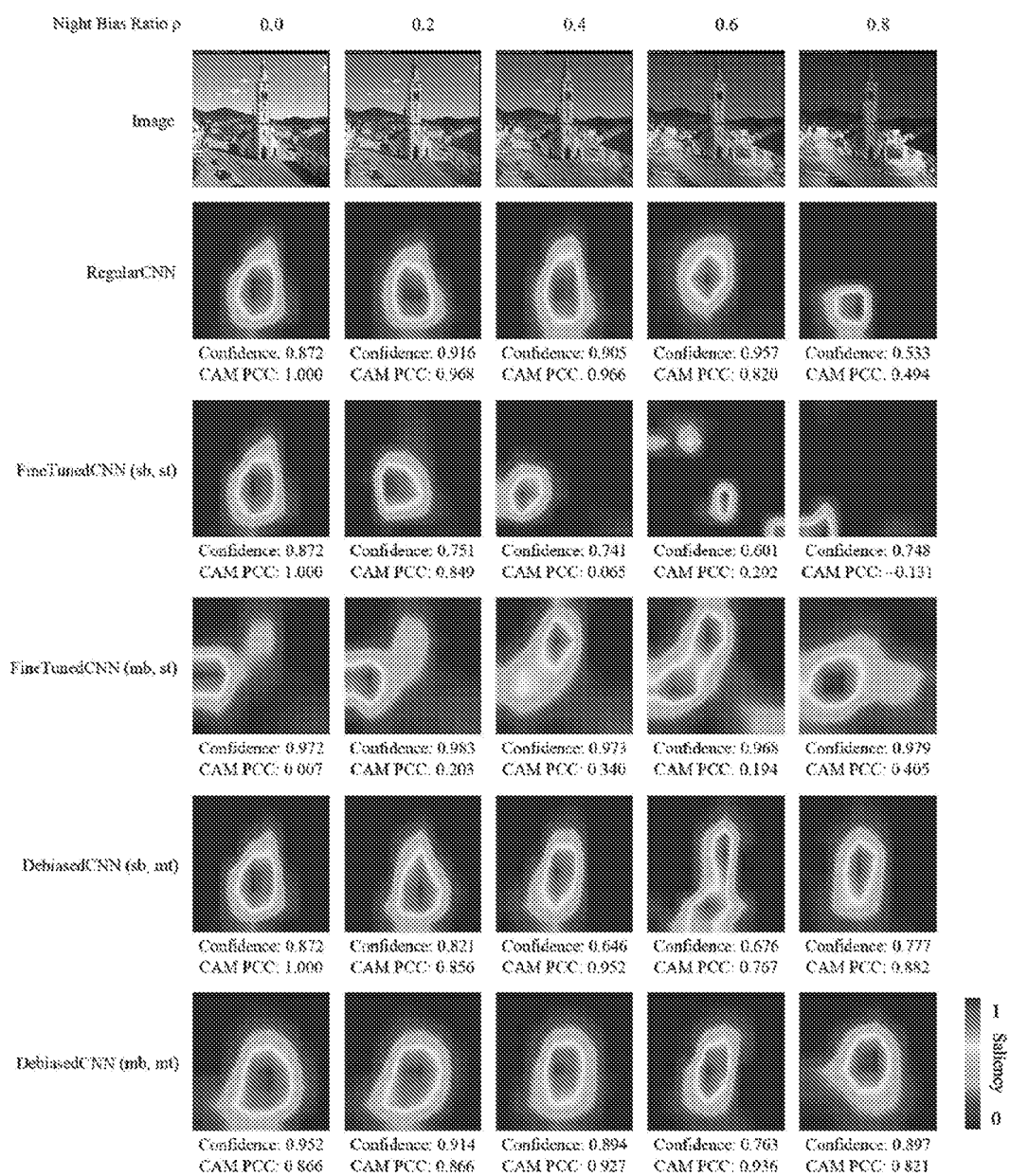


FIG. 45

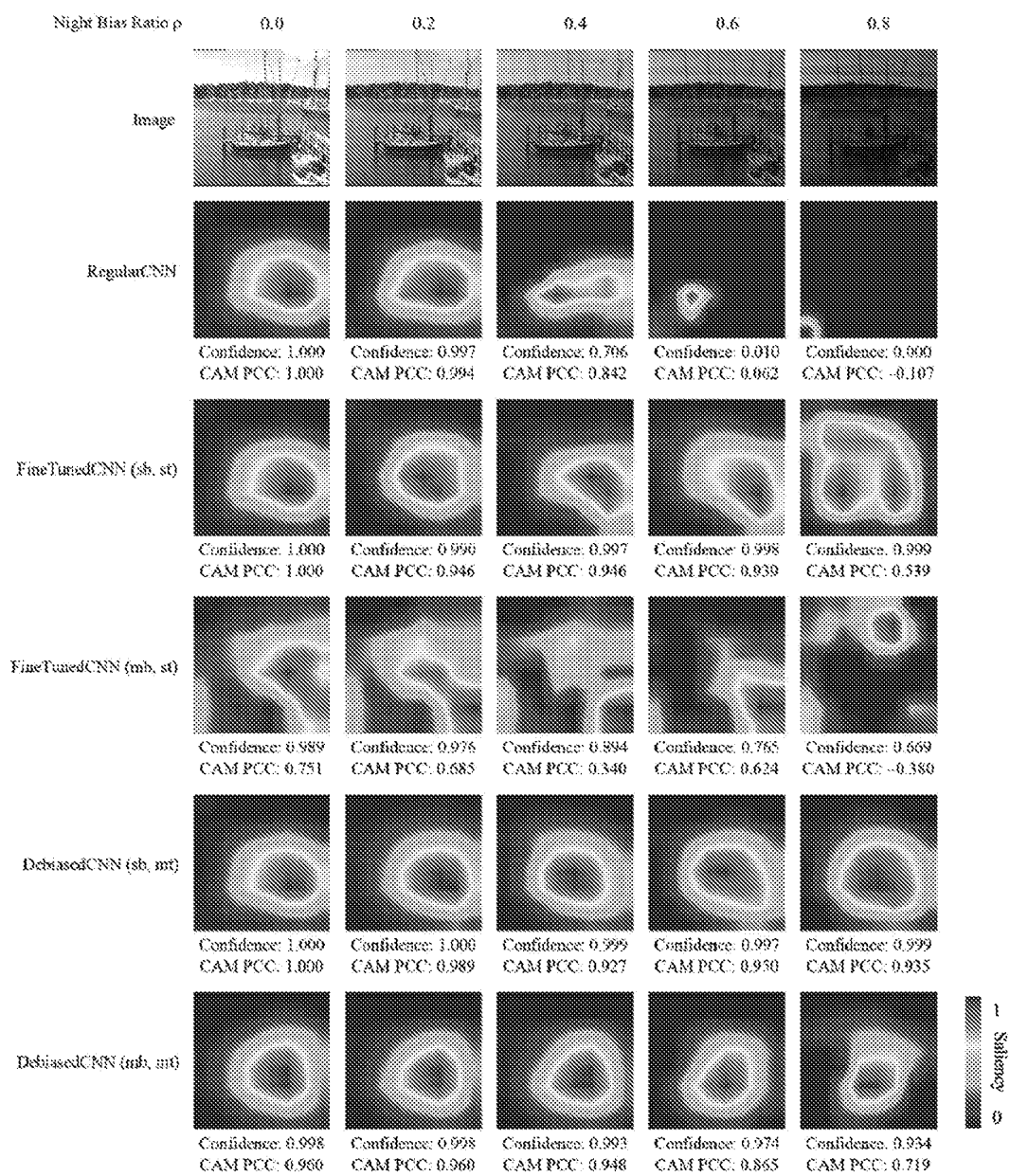


FIG. 46

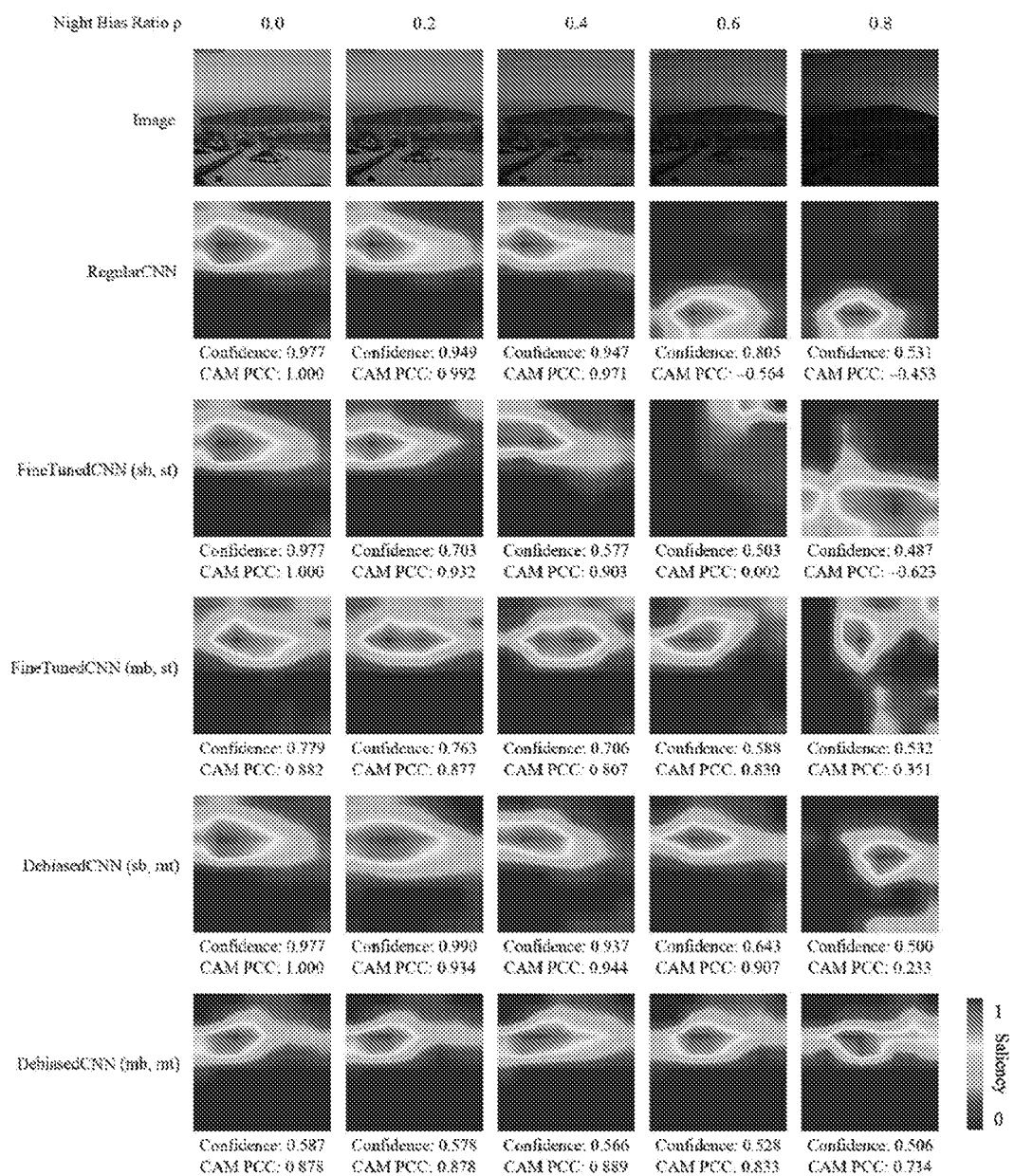


FIG. 47

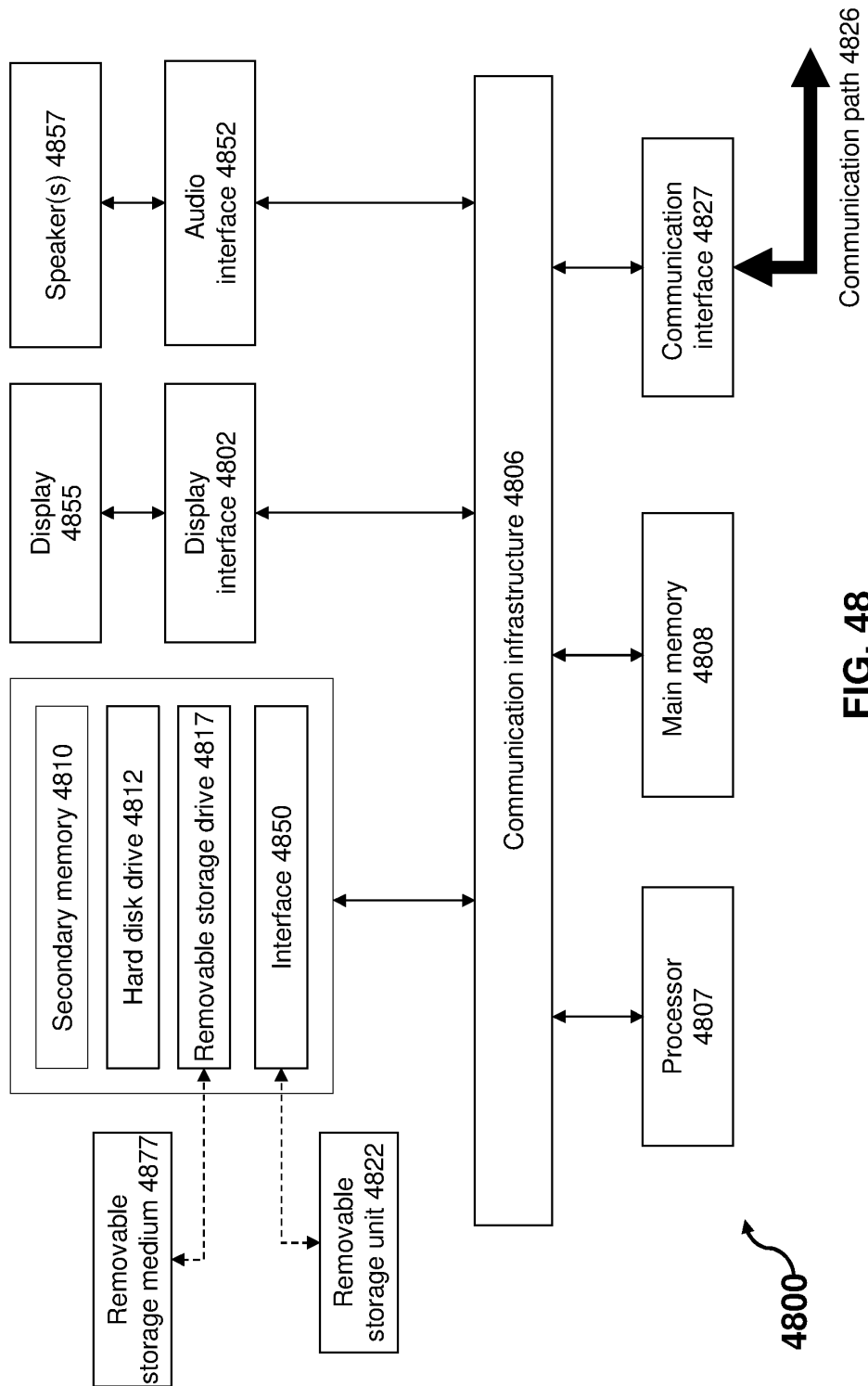


FIG. 48