DRSS SEVERITY CLASSIFICATION ON OCT IMAGES

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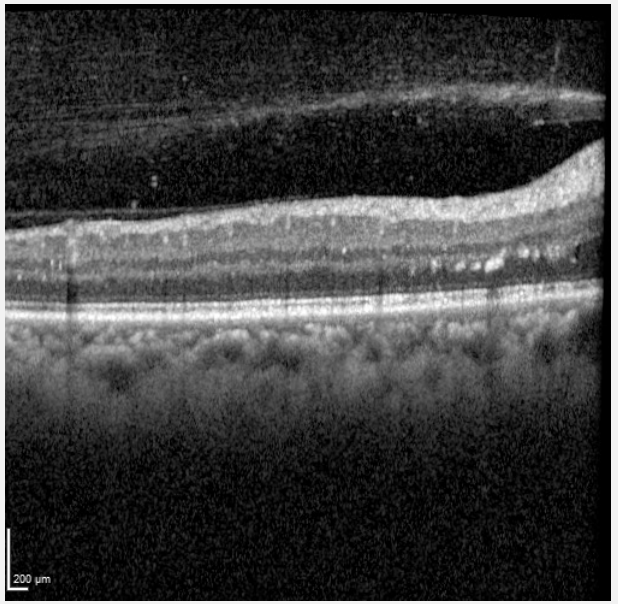
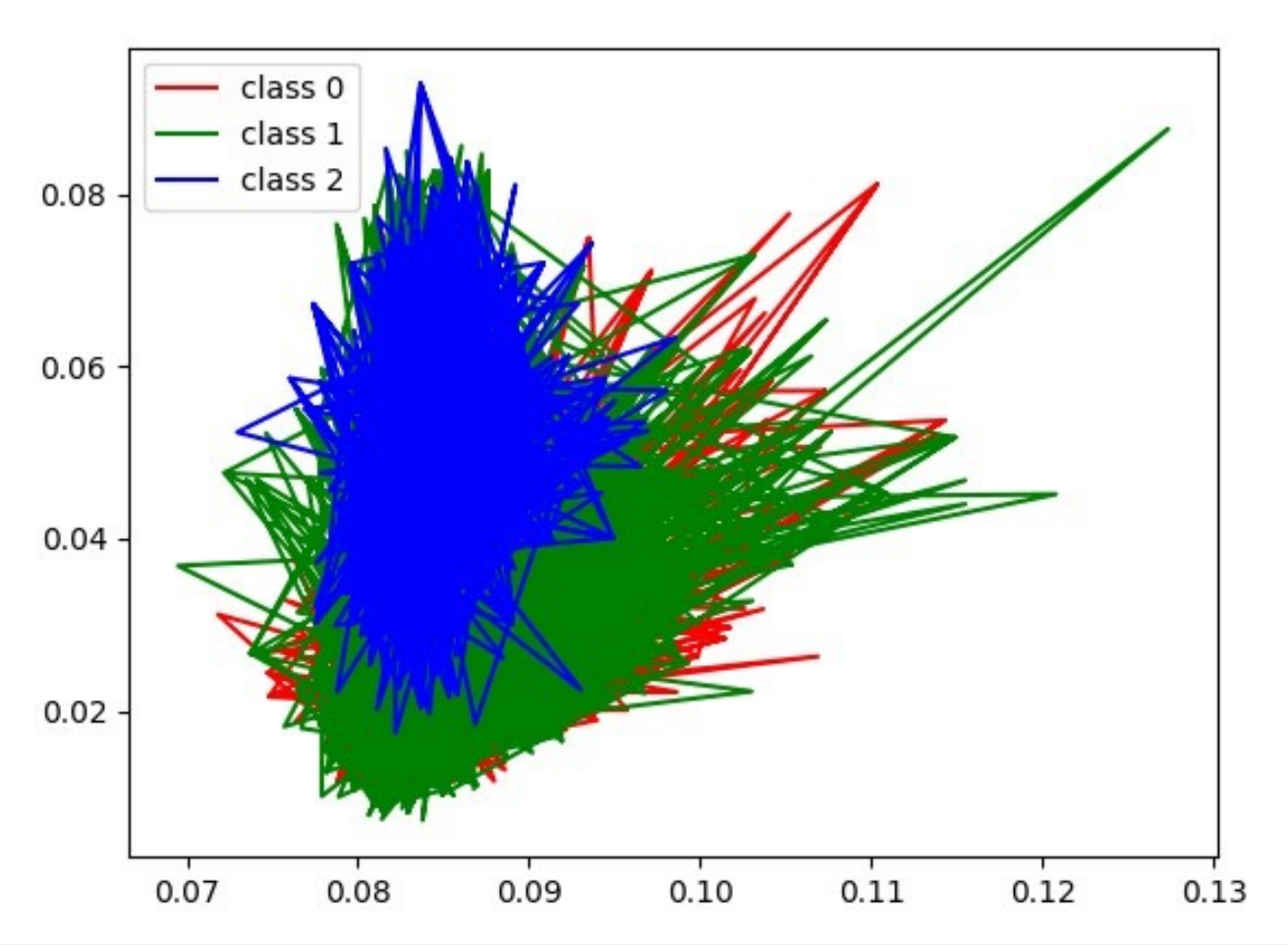
OVERVIEW

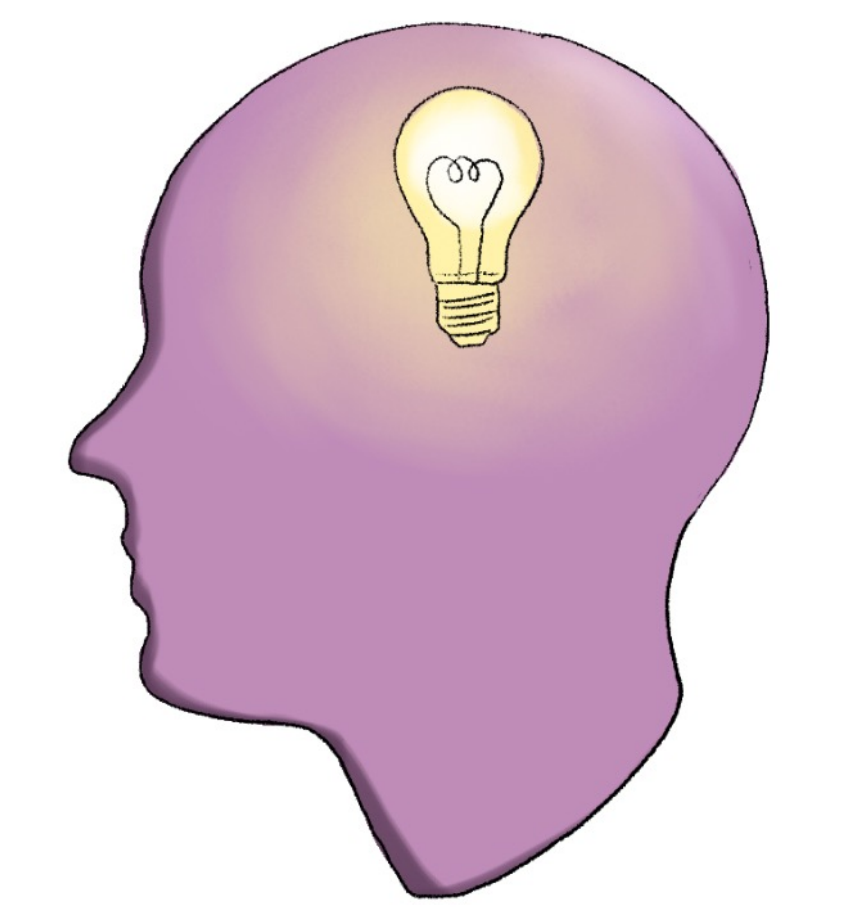
HEURISTICS?



AUTOENCODER TO 2 DIMENSIONS



FLASHBULB MEMORY



- A vivid, enduring memory associated with a personally significant and emotional event[2]

- Train models with classes 0 and 2 for the majority of epochs, then introduce class 1 with a higher learning rate for a single epoch

FOUR METHODS

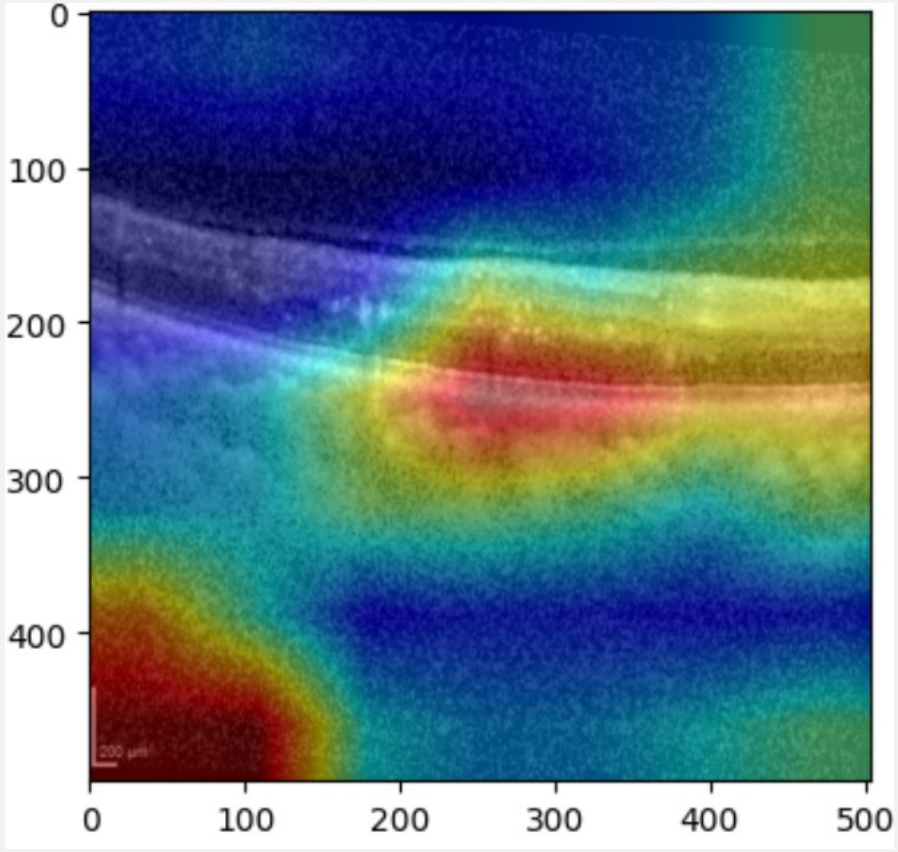
1. Naïve Bayes
2. Support Vector Machines
3. AlexNet with new weights
4. ResNet50 with Transfer Learning

RESULTS AND DISCUSSION

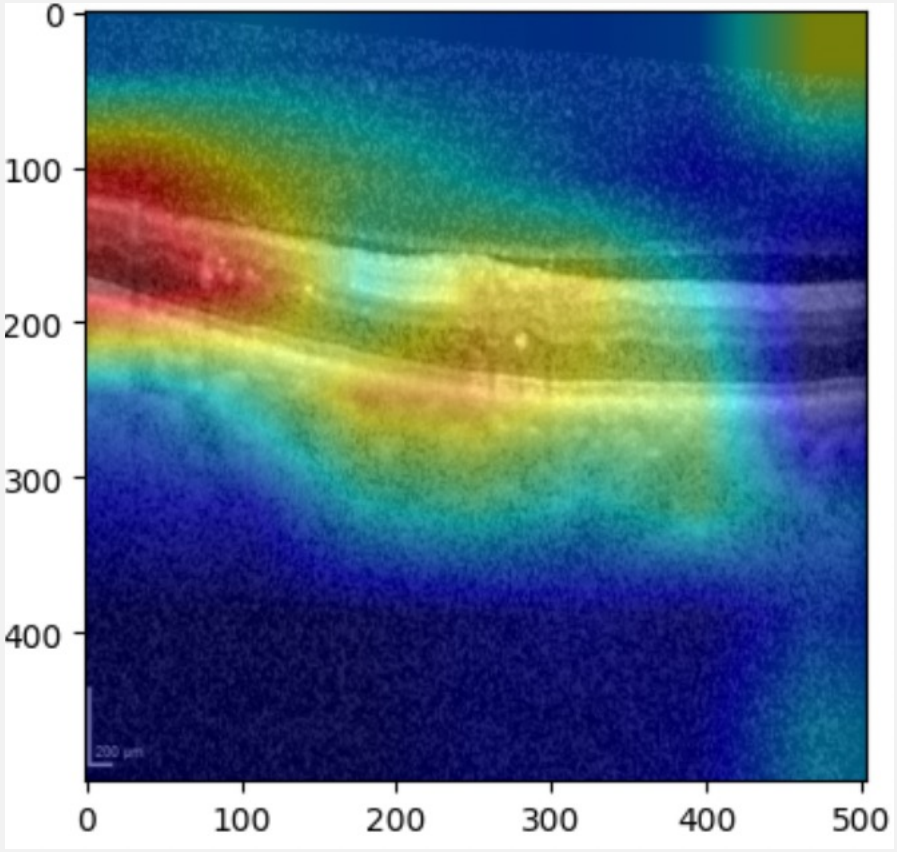
Method	Accuracy
Naïve Bayes	0.401
SVM	0.352
AlexNet	0.442
ResNet50	0.385
AlexNet Flashbulb	0.362
ResNet50 Flashbulb	0.348

SALIENCY MAP COMPARISON

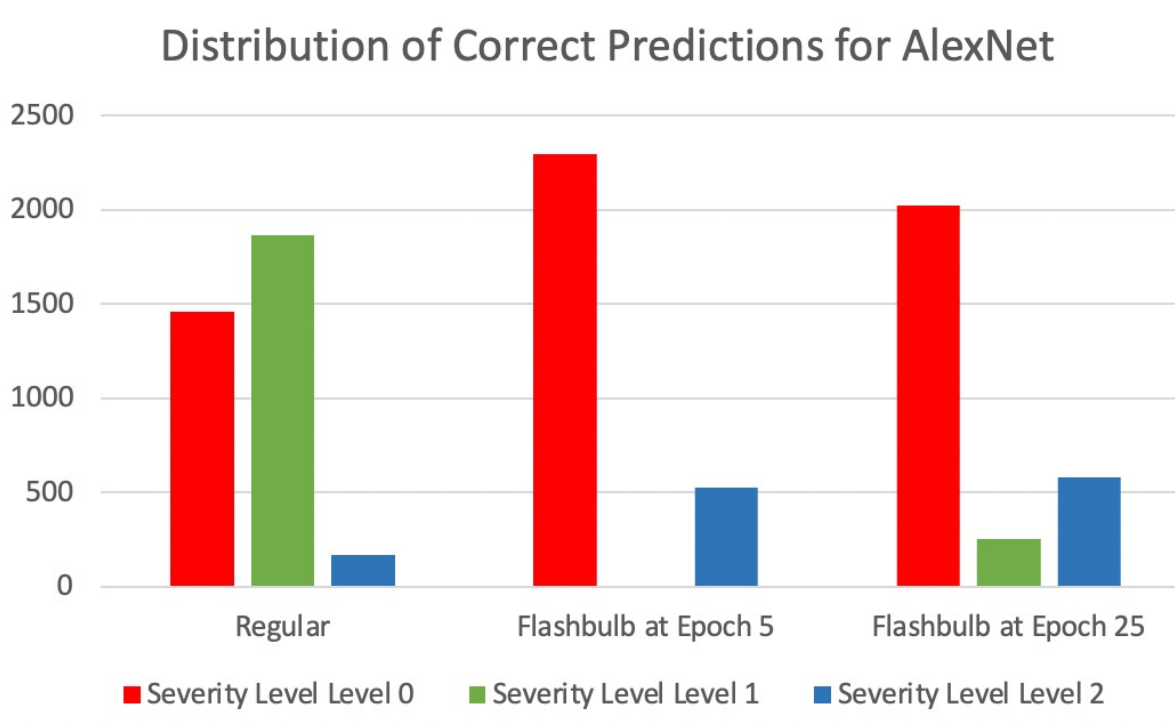
AlexNet

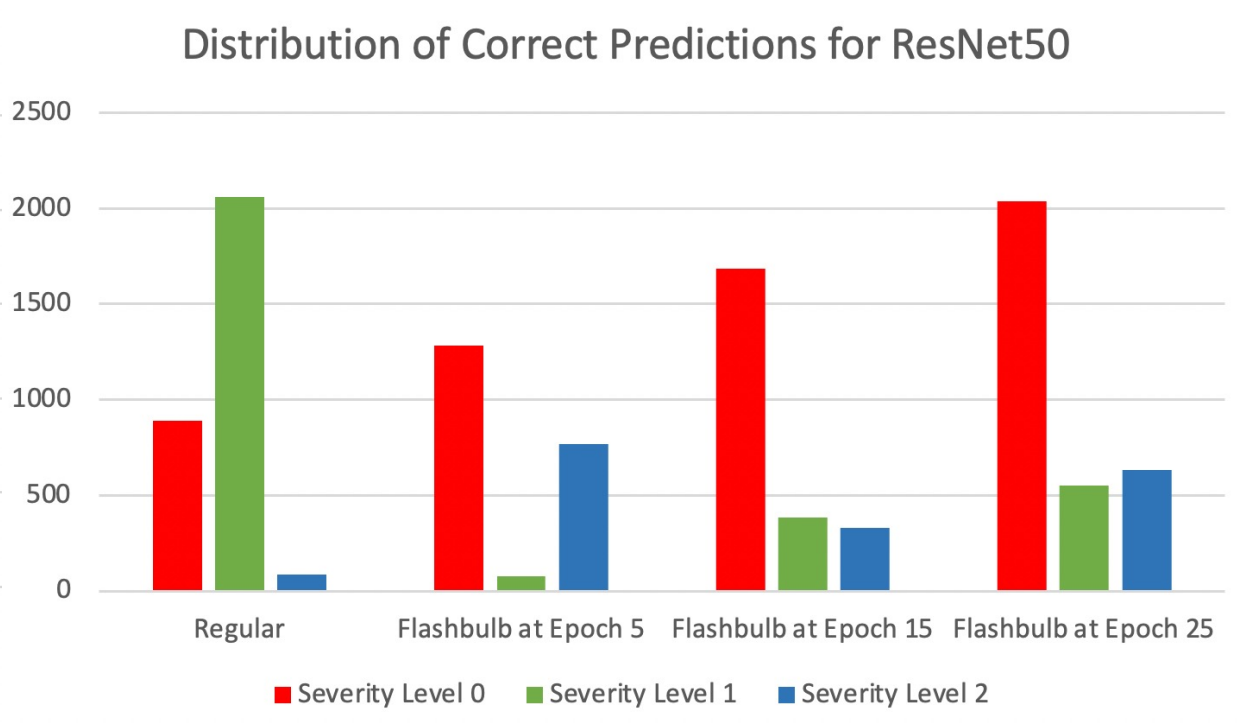


ResNet50



RESULTS AND DISCUSSION





FUTURE WORK

- Utilize more biomarkers in training various models

- Determine what causes the loss value to jump so high in the case of flashbulb training with AlexNet

REFERENCES

[1] M. Prabhushankar, K. Kokilepersaud*, Y. Logan*, S. Trejo Corona*, G. AlRegib, C. Wykoff, "OLIVES Dataset: Ophthalmic Labels for Investigating Visual Eye Semantics," in *Advances in Neural Information Processing Systems (NeurIPS 2022) Track on Datasets and Benchmarks*, New Orleans, LA,, Nov. 29 - Dec. 1 2022

[2] Roger Brown, James Kulik, Flashbulb memories, Cognition, Volume 5, Issue 1, 1977, Pages 73-99, ISSN 0010-0277, https://doi.org/10.1016/0010-0277(77)90018-X.