DRSS SEVERITY CLASSIFICATION ON OCT IMAGES

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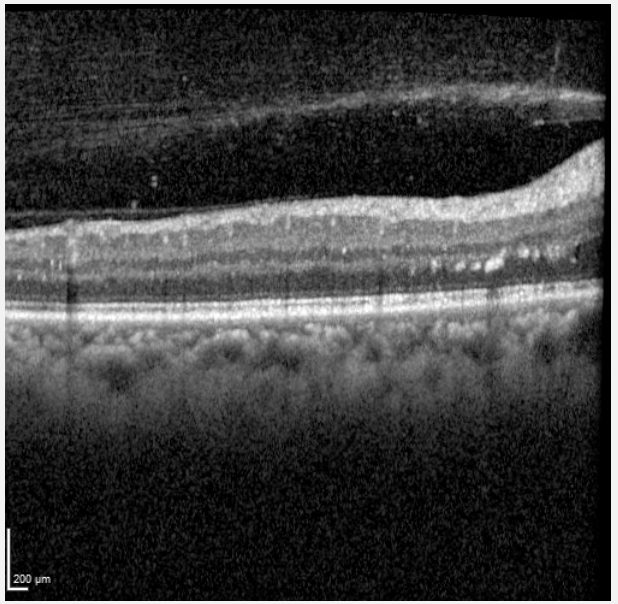
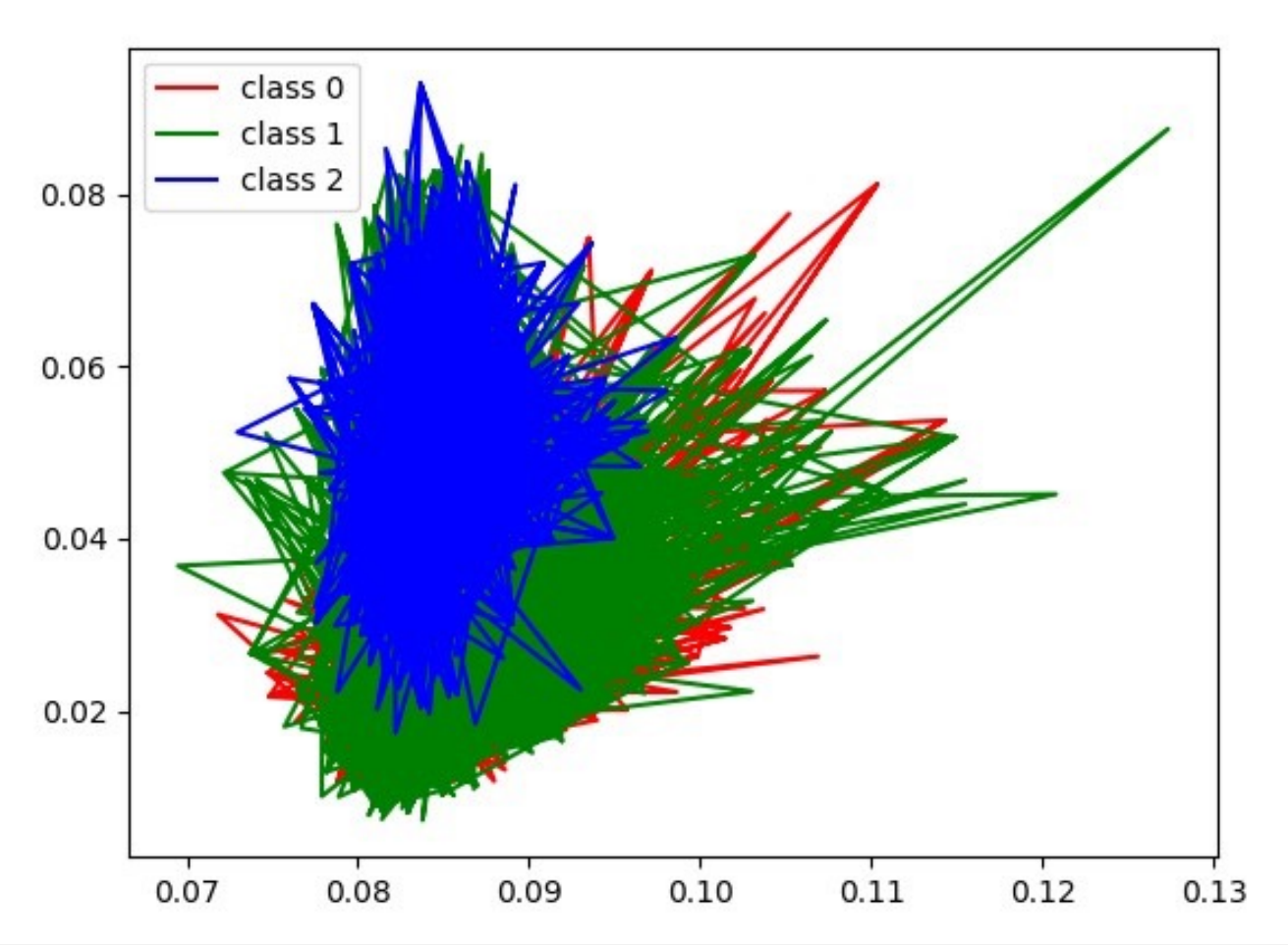
OVERVIEW

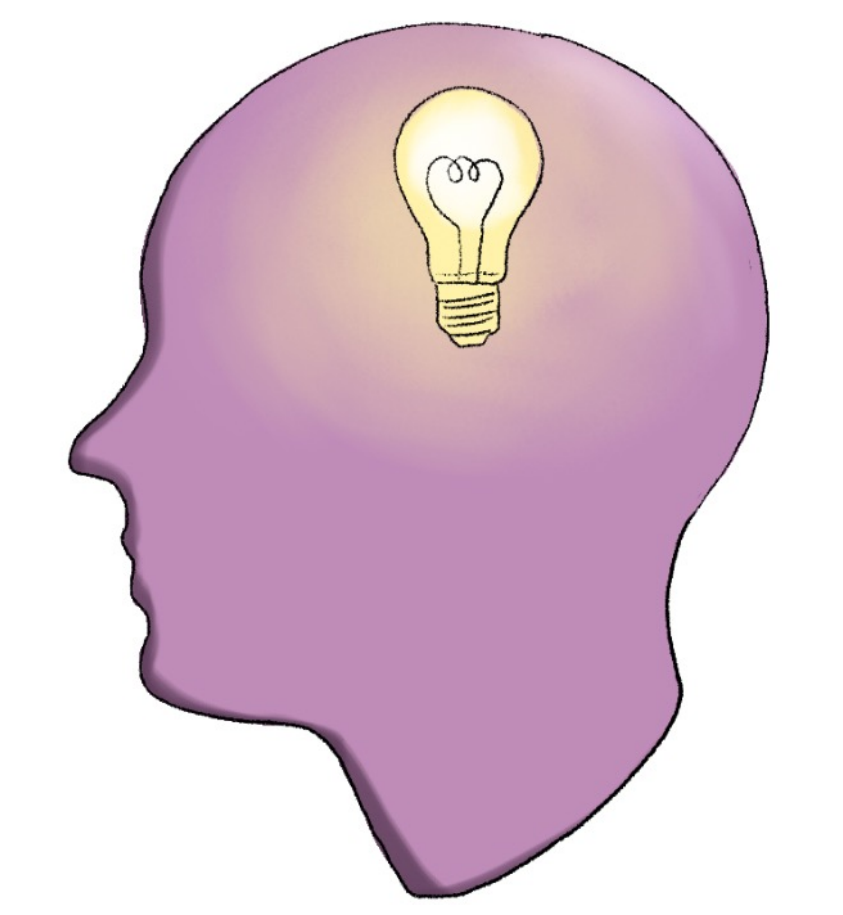
HEURISTICS?



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

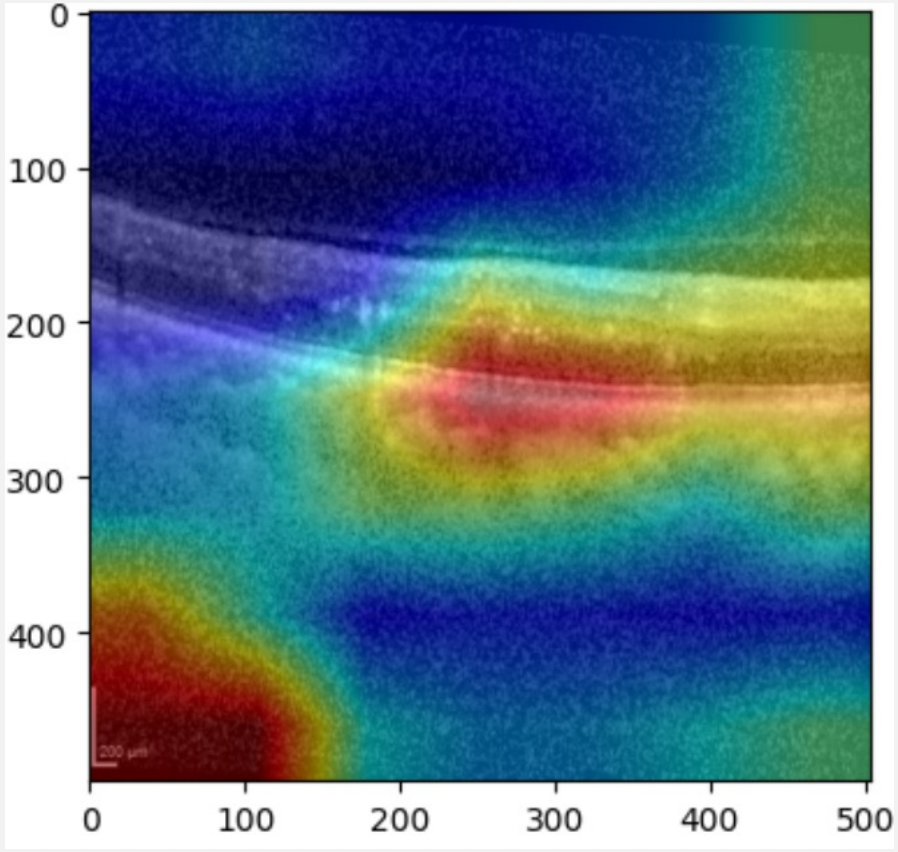
1. Naïve Bayes
2. k-Nearest Neighbors
3. AlexNet with new weights
4. ResNet50 with Transfer Learning

RESULTS AND DISCUSSION

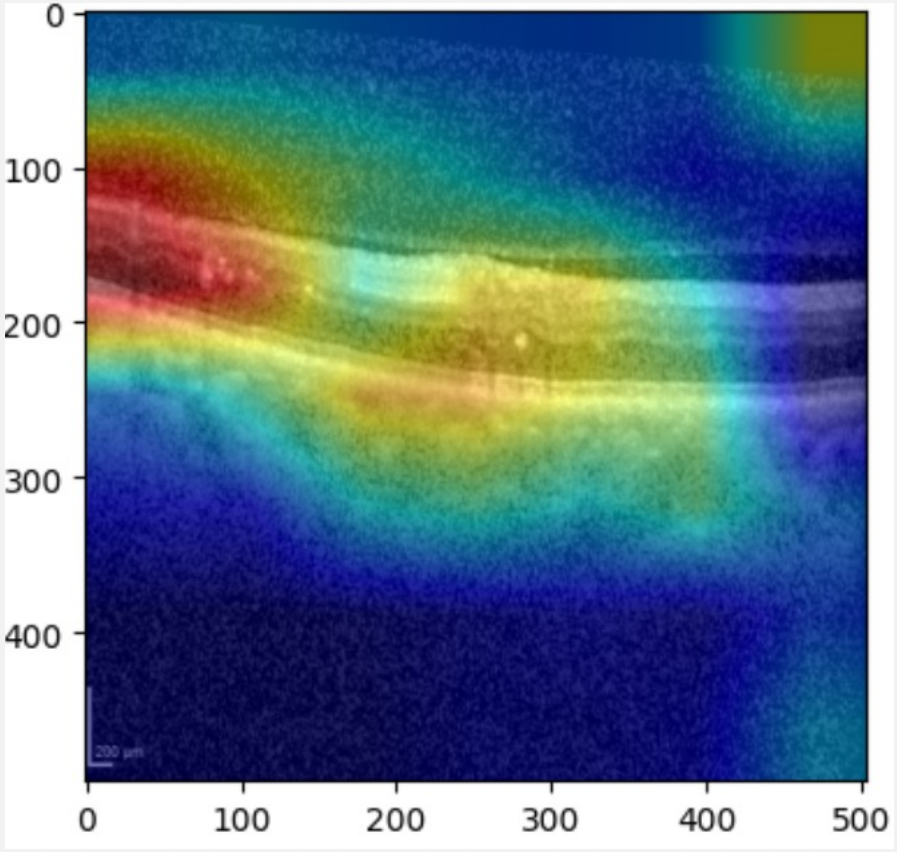
Method	Accuracy
Naïve Bayes	0.401
k-NN	0.352
AlexNet	0.442
ResNet50	0.385
AlexNet Flashbulb	0.362
ResNet50 Flashbulb	0.348

SALIENCY MAP COMPARISON

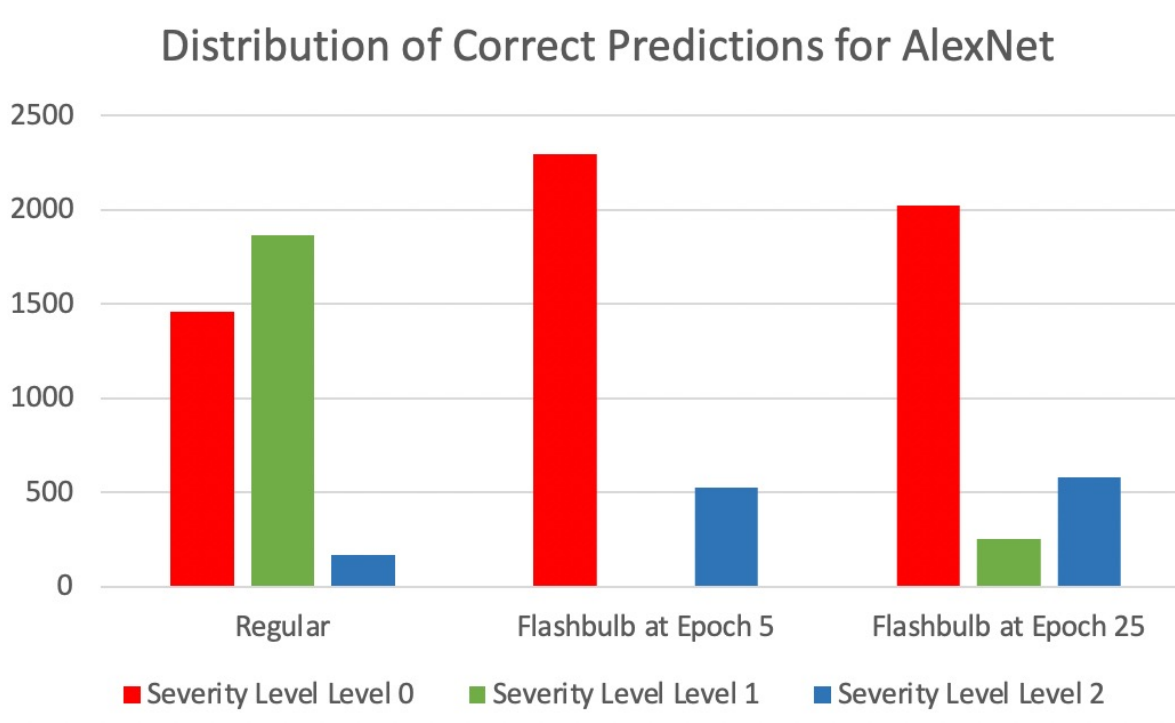
AlexNet

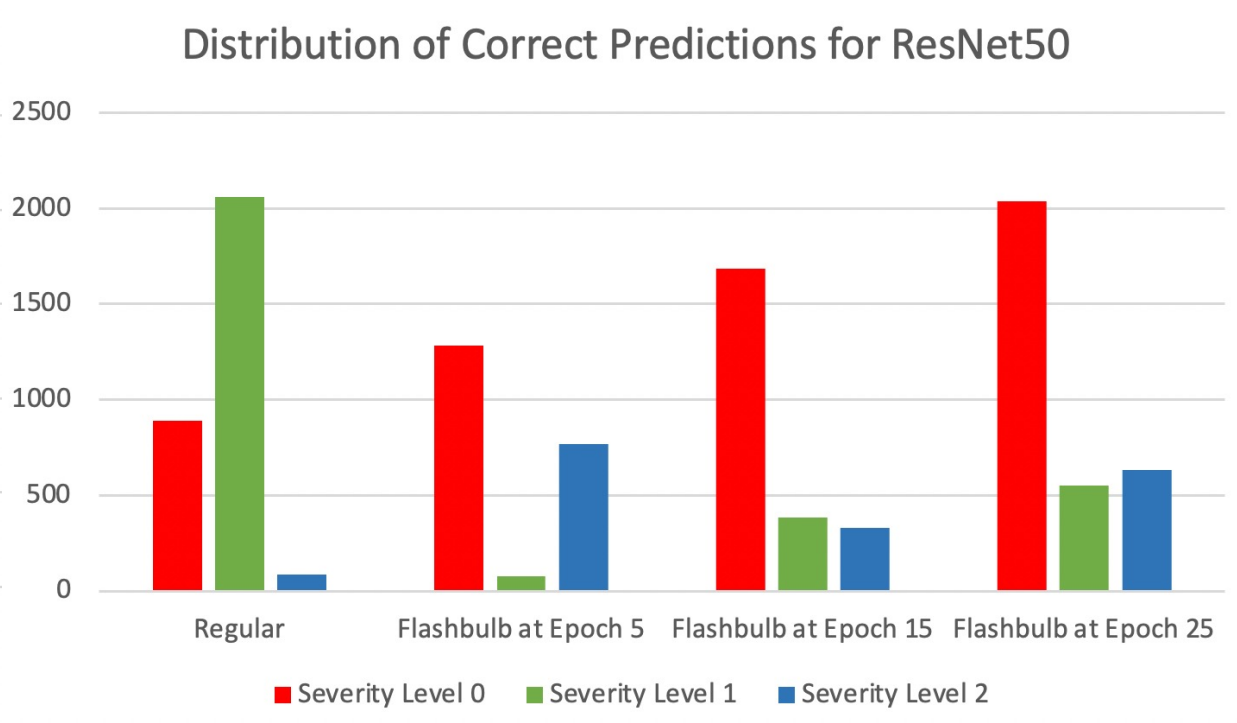


ResNet50



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.