

INTRO/ABSTRACT

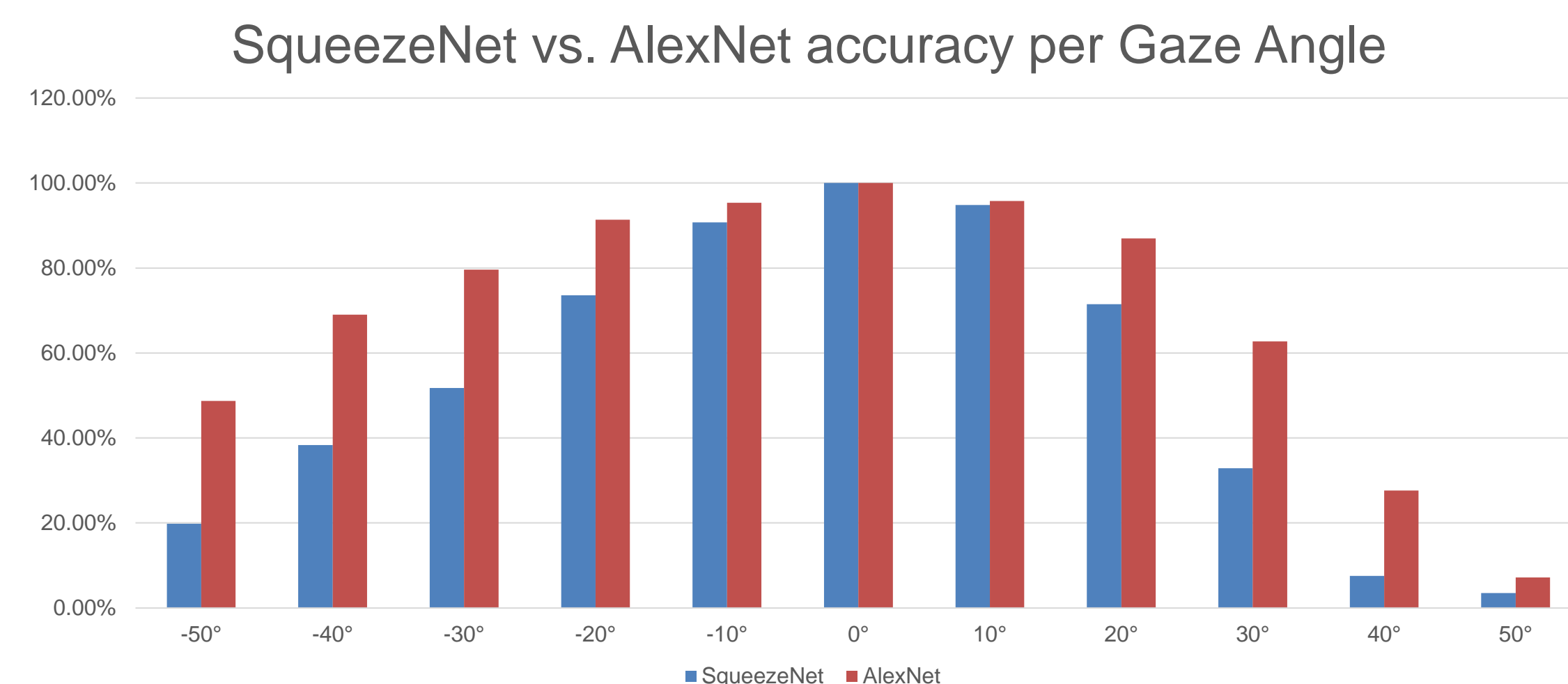
This research paper investigates the use of the SqueezeNet Machine Learning Neural Network to identify a subject from off-angle iris images. SqueezeNet is a convolutional neural network (CNNs) which contains 50x lesser parameters than AlexNet. It allows the model to be trained on the dataset on devices that have limited resources. The training dataset contains Iris images where the gaze angles are at 0 degrees, while the validation dataset uses off-angle images.

METHODS

For this research, we have taken iris images from an infrared camera that took 10 images per gaze angle, which ranged from 0 degrees to 50 degrees at both sides. We trained both the SqueezeNet CNN and AlexNet CNN using the frontal images as the training dataset.

**RESULTS**

While AlexNet had a slightly better accuracy identifying subjects at an off-angle, SqueezeNet identifies subjects accurately with lesser parameters.

**Resources:**

F. Iandola, S. Han, M. Moskewicz, K. Ashraf, W. Dally, K. Keutzer, "SqueezeNet: AlexNet-level accuracy with 50x fewer parameters and <0.5MB model size," (2016), arXiv:1602.07360

M. Karakaya, A study of how gaze angle affects the performance of iris recognition †, Pattern Recognition Letters (2015),

<http://dx.doi.org/10.1016/j.patrec.2015.11.001>

[.com/tutorials/scientific-poster-parts.aspx](http://www.kennesaw.edu/computing/tutorials/scientific-poster-parts.aspx)

We used a SqueezeNet Algorithm to train the model on identifying a subject based on off-angle iris images.

