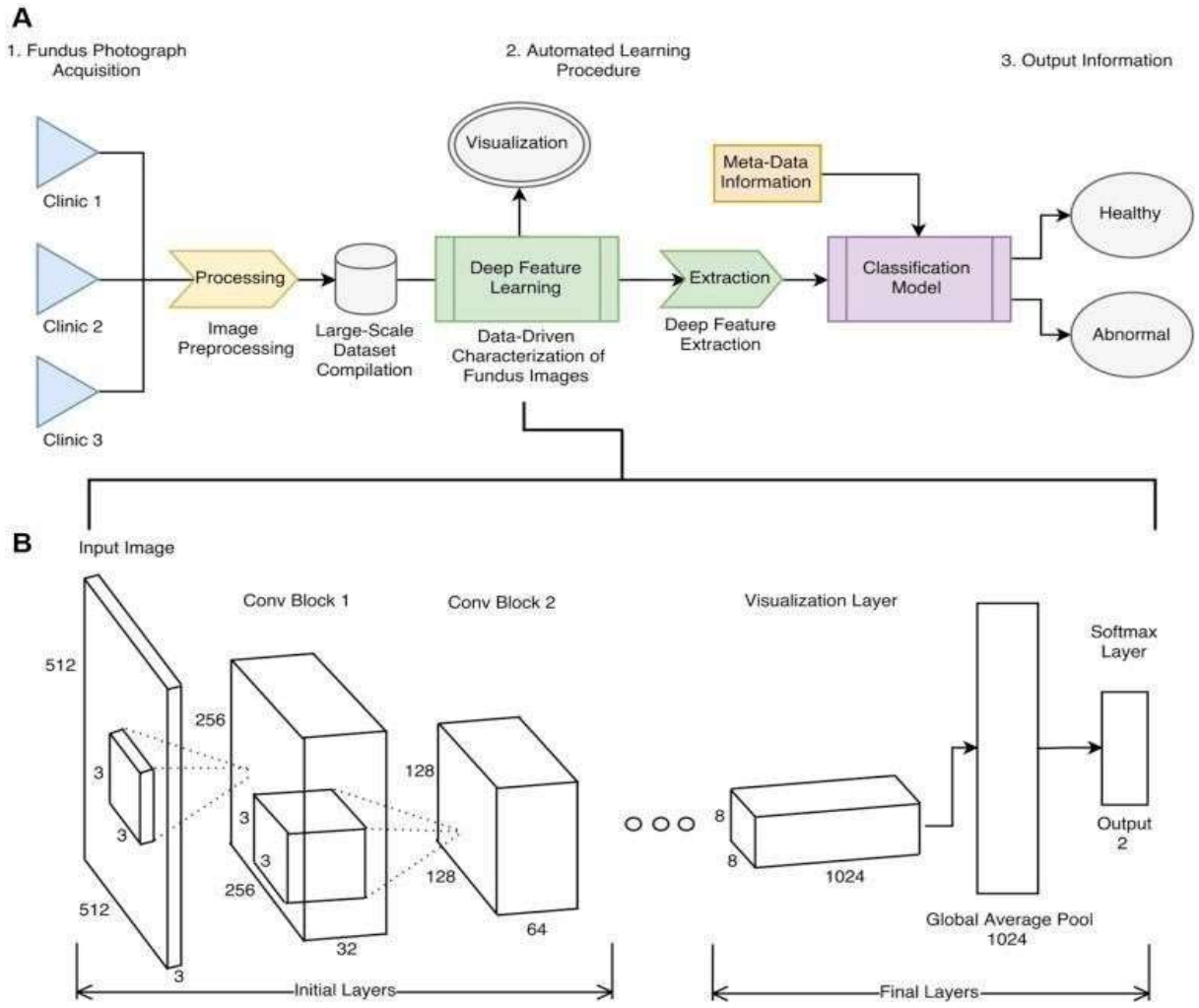
SOLUTION ARCHITECTURE:

STRUCTURE:



FEATURES:

TensorFlow provides stable Python (for version 3.7 across all platforms)[26] and C APIs;[27] and without API backwards compatibility guarantee: C++, Go, Java,[28] JavaScript[3] and Swift (early release).[29][30] Third-party packages are available for C#,[31][32] Haskell,[33] Julia,[34] R,[35] Scala,[36] Rust,[37] OCaml,[38] and Crystal.[39] "New language support should be built on top of the C API. However, [..] not all functionality is available in C yet."[40] Some more functionality is provided by the Python AP.

SOLUTION REQUIREMENTS:

You can't always prevent diabetic retinopathy. However, regular eye exams, good control of your blood sugar and blood pressure, and early intervention for vision problems can help prevent severe vision loss.If you have diabetes, reduce your risk of getting diabetic retinopathy by doing the following:

- **Manage your diabetes***. Make healthy eating and physical activity part of your daily routine. Try to get at least 150 minutes of moderate aerobic activity, such as walking, each week. Take oral diabetes medications or insulin as directed.*
- **Monitor your blood sugar level***. You might need to check and record your blood sugar level several times a day — or more frequently if you're ill or under stress. Ask your doctor how often you need to test your blood sugar.*
- **Ask your doctor about a glycosylated hemoglobin test.** *The glycosylated hemoglobin test, or hemoglobin A1C test, reflects your average blood sugar level for the two- to three-month period before the test. For most people with diabetes, the A1C goal is to be under 7%.*
- **Keep your blood pressure and cholesterol under control.** *Eating healthy foods, exercising regularly and losing excess weight can help. SSometimes medication is needed, too.*
- **If you smoke or use other types of tobacco, ask your doctor to help you quit.** *Smoking increases your risk of various diabetes complications, including diabetic retinopathy.*
- **Pay attention to vision changes***. Contact your eye doctor right away if your vision suddenly changes or becomes blurry,spotty or hazy.*

Advanced diabetic retinopathy:*If you have proliferative diabetic retinopathy or macular edema, you'll need prompt treatment.Depending on the specific problems with your retina, options might include:*

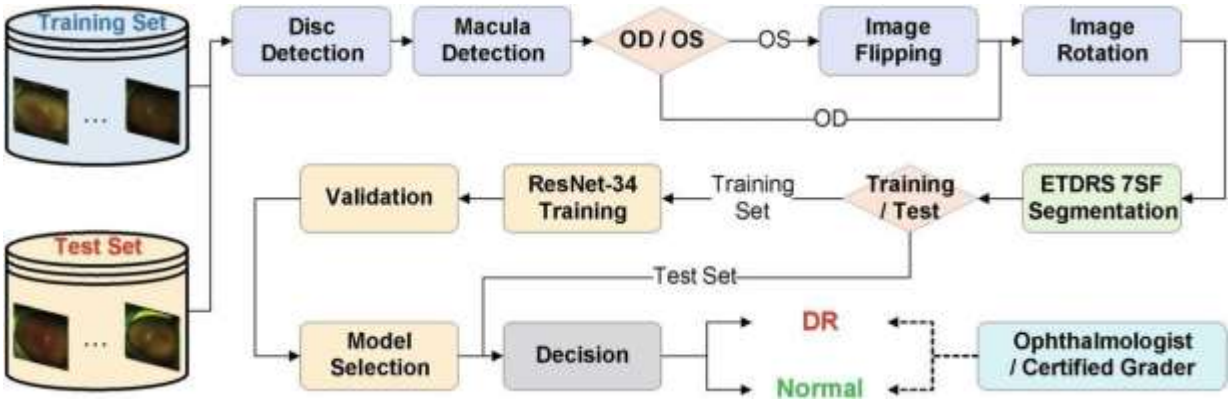
- **Injecting medications into the eye***. These medications, called vascular endothelial growth factor inhibitors, are injected into the vitreous of the eye. They help stop growth of new blood vessels and decrease fluid buildup.*
- *Two drugs are approved by the U.S. Food & Drug Administration (FDA) for treatment of diabetic macular edema — ranibizumab (Lucentis) and aflibercept (Eylea). A third drug, bevacizumab (Avastin), can be used off-label for the treatment of diabetic macular edema.These drugs are injected using topical anesthesia. The injections can cause mild discomfort, such as burning, tearing or pain, for 24 hours after the injection. Possible side effects include a buildup of pressure in the eye and infection.These injections will need to be repeated.*
- **Photocoagulation***. This laser treatment, also known as focal laser treatment, can stop or slow the leakage of blood and fluid in the eye. During the procedure, leaks from abnormal blood vessels are treated with laser burns.Focal laser treatment is*

usually done in your doctor's office or eye clinic in a single session. If you had blurred vision from macular edema before surgery, the treatment might not return your vision to normal, but it's likely to reduce the chance of the macular edema worsening.

- **Panretinal photocoagulation**. *This laser treatment, also known as scatter laser treatment, can shrink the abnormal blood vessels. During the procedure, the areas of the retina away from the macula are treated with scattered laser burns. The burns cause the abnormal new blood vessels to shrink and scar.it's usually done in your doctor's office or eye clinic in two or more sessions. Your vision will be blurry for about a day after the procedure. Some loss of peripheral vision or night vision after the procedure is possible.*
- **Vitrectomy.** *This procedure uses a tiny incision in your eye to remove blood from the middle of the eye (vitreous) as well as scar tissue that's tugging on the retina. It's done in a surgery center or hospital using local or general anesthesia.*

While treatment can slow or stop the progression of diabetic retinopathy, it's not a cure. Because diabetes is a lifelong condition, future retinal damage and vision loss are still possible.Even after treatment for diabetic retinopathy, you'll need regular eye exams. At some point, you might need additional treatment.

Example - Solution Architecture Diagram:



Reference:

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