

Bionic Eye: Processing Camera Images and Converting Them to Electrical Signals to Replicate the Visual Pathway

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A bionic eye, also known as a visual prosthetic or artificial eye, is a device designed to restore or enhance vision in individuals with visual impairments or blindness. It combines biological and electronic components to mimic the function of a natural eye. The key components and features of a bionic eye can vary depending on the specific technology and design. The project starts with the evisceration procedure the ESP32 camera in the prosthetic eye sends a live broadcast wirelessly to the raspberry pi (VPU) and then the raspberry pi turns the video into electrical signals using after prepping them one by one and turning them to binary data (0,1) and then the electrical signals go through copper wires to the last destination which is a chip attached to the brain and specifically to the visual cortex and the that is when the patient can see. We might add an extra part to trigger the brain and trick it into thinking that the eye is working so it will be ready to receive data and the bionic eye will supply it with the data it's looking for. An approximate percentage of blind people that can be cured using a bionic eye could be around 20-30%, but it's essential to note that this figure can vary.