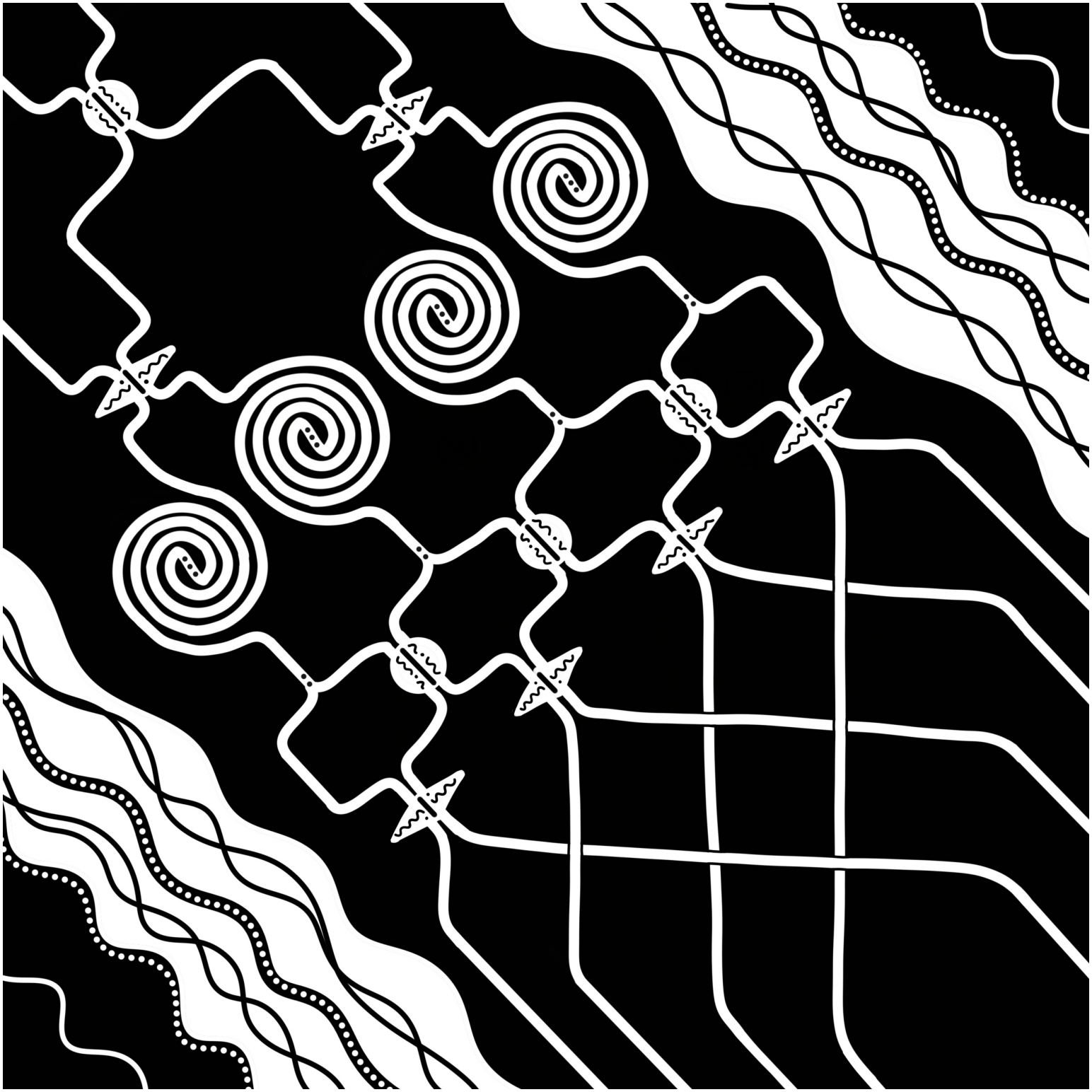

Photonic Qubits

Photons are all around us–they are light! The beginning of quantum physics can be traced back to photons, when scientists were confused about their peculiar quantum behavior of acting like a wave and a particle. When light acts like a wave, it can **interfere** with itself like two waves crashing into themselves on the shore. Each light wave can wiggle–or **oscillate**–around in all different directions. Scientists can use this to their advantage by filtering out light that only oscillates in one particular direction. This is called **polarization**. The polarization of the light can act as a qubit. After polarizing the light, scientists carefully control when light interacts and can entangle it with other light particles. The photons travel through intricate, microscopic paths, which are similar to the much larger fiber optic cables that bring the internet to your home.