Thimble Intro/Abstract

The Thimble is a tethered submersible device designed to explore water mains in search of leaks, cracks, and corrosion. After being inserted through the top valve of a fire hydrant, the Thimble navigates to the water main to collect data, which it sends to its operator through the tether. The Thimble is propelled by a central motor that directs flow to four angled output channels, allowing it to advance forward and change direction. The flow through these channels is controlled using a system of butterfly valves, which open and close to push the Thimble in the desired direction. The Thimble is revolutionary in the field of leak detection for collecting internal pipe data without the need to excavate water mains or shut off flow.

Achilles Bio

Achilles is a product engineer committed to human centered design. He seeks to improve his design skills with socially impactful projects like the Thimble.

He is a graduate of Columbia University with a B.S. in mechanical engineering and has worked with various educational spaces at Columbia to design and develop educational devices with them.