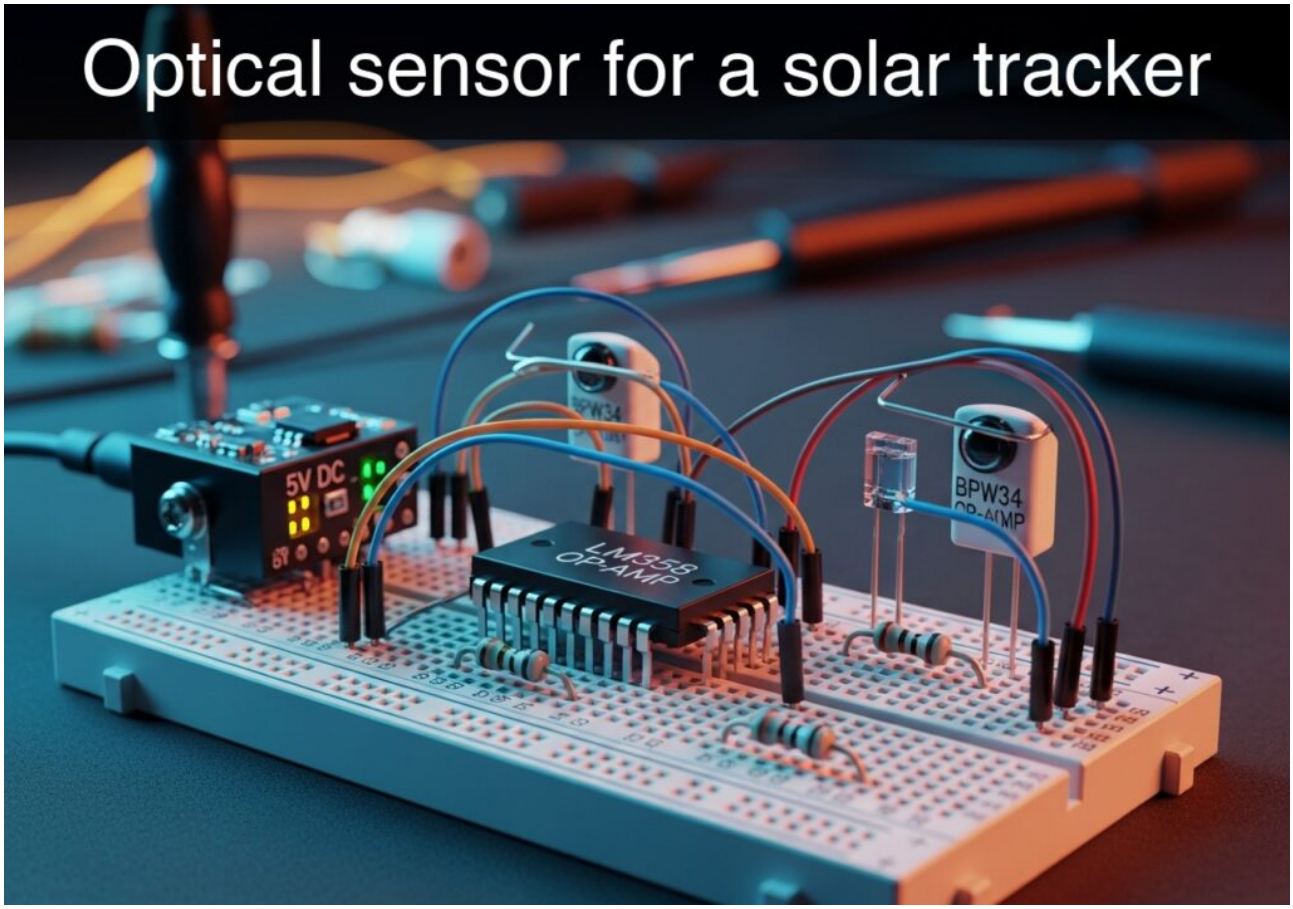
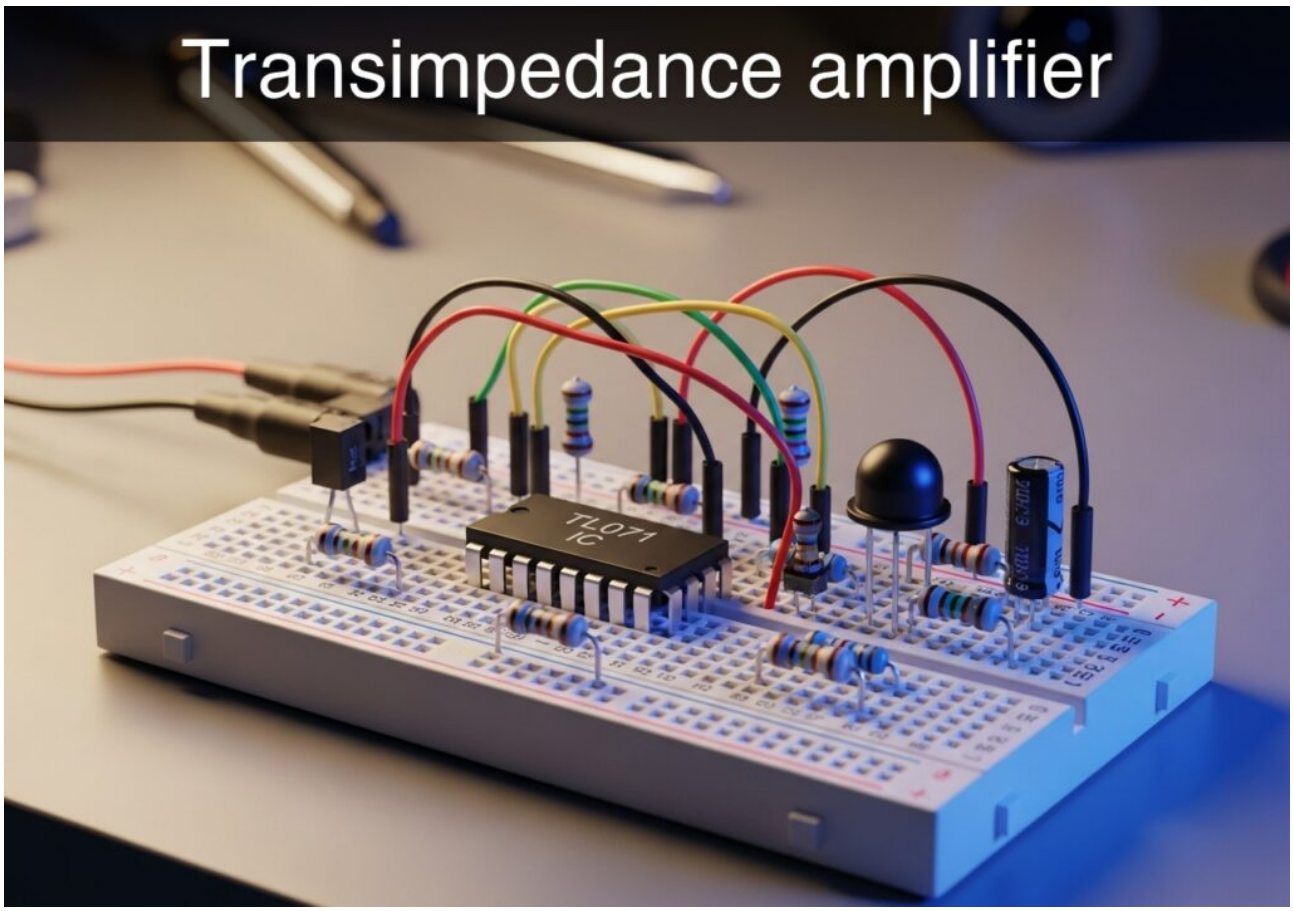
Practical case: Optical sensor for a solar tracker



Level: Medium – Design a circuit with two photodiodes in a differential configuration to detect the direction of the highest intensity light source.

##…

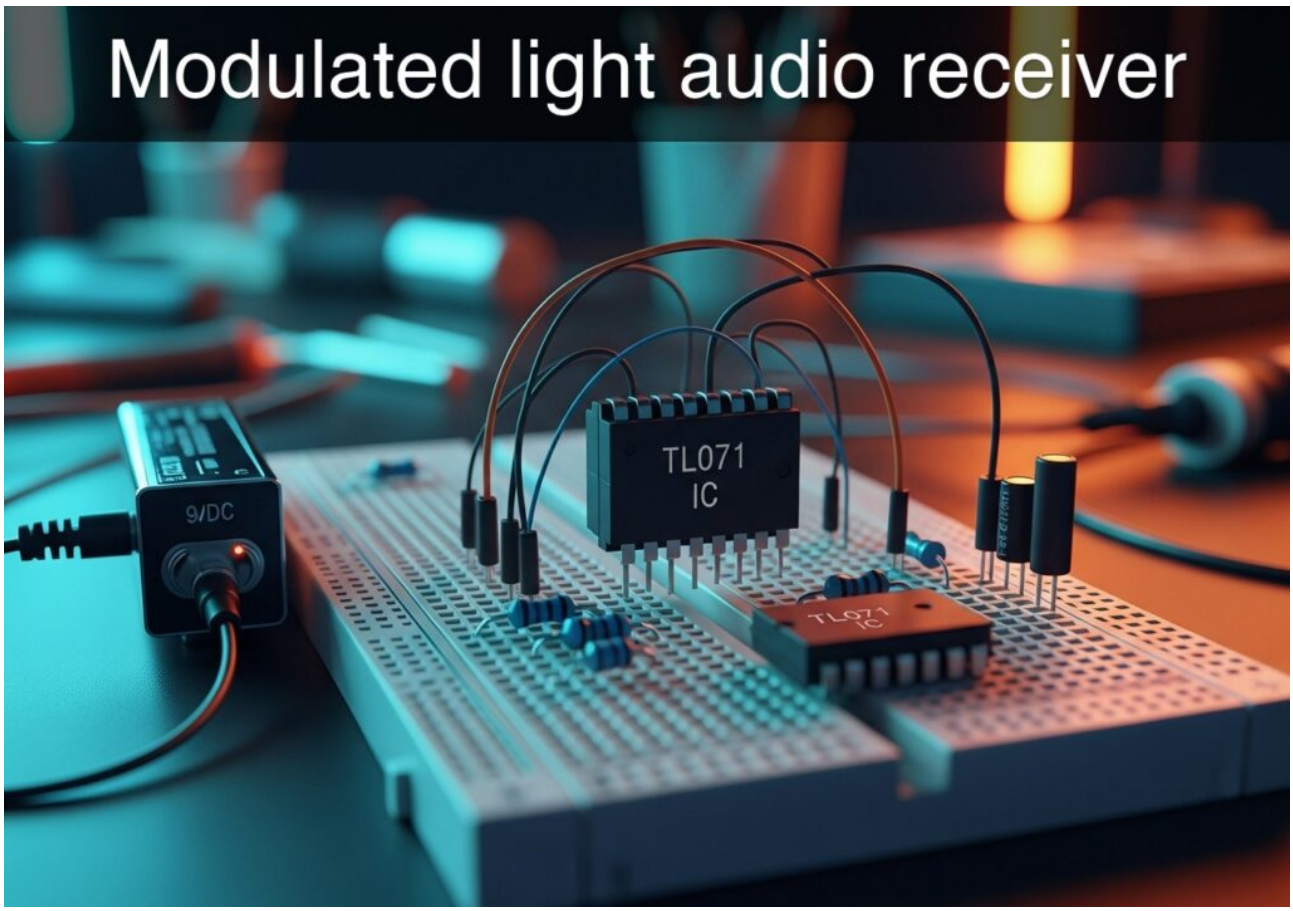
Practical case: Transimpedance amplifier



Level: Medium – Design an OPAMP transimpedance amplifier to convert the small photodiode current into a measurable voltage.

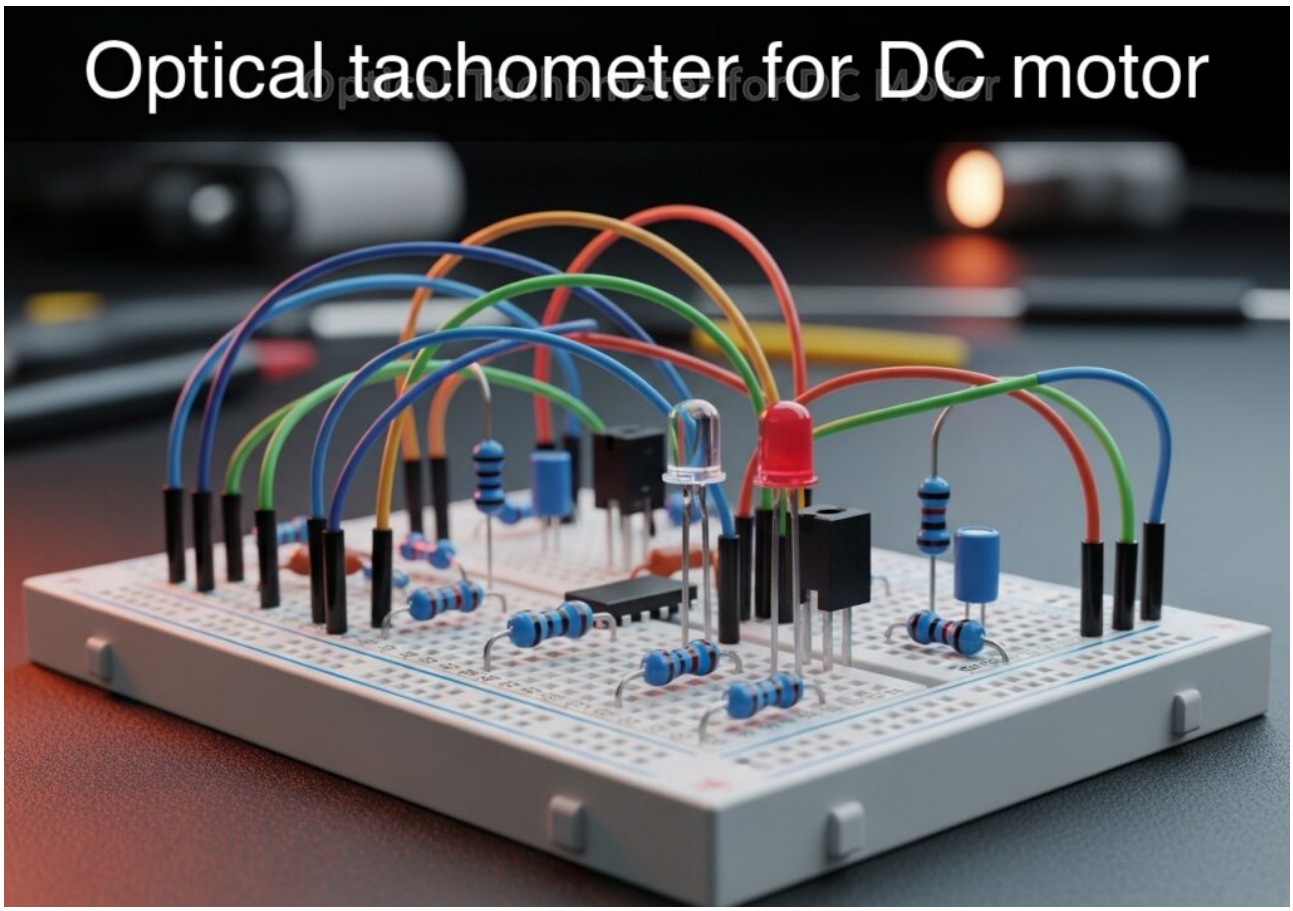
Objective and use case
You…

Practical case: Modulated light audio receiver



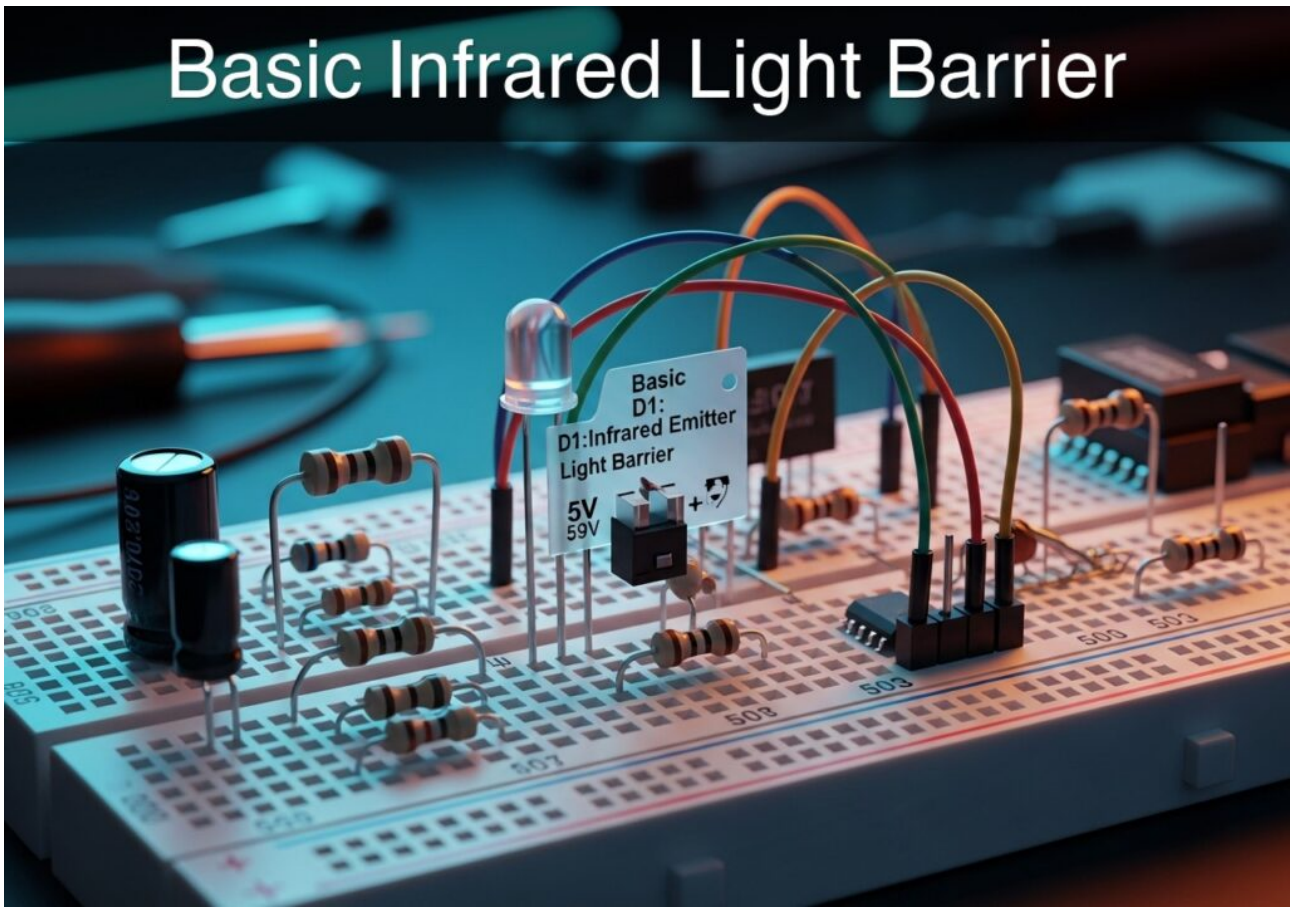
Master Analog Electronics by building an optical audio receiver. Use a Photodiode and TIA to demodulate light beams into clear, isolated audio signals.

Practical case: Optical tachometer for DC motor



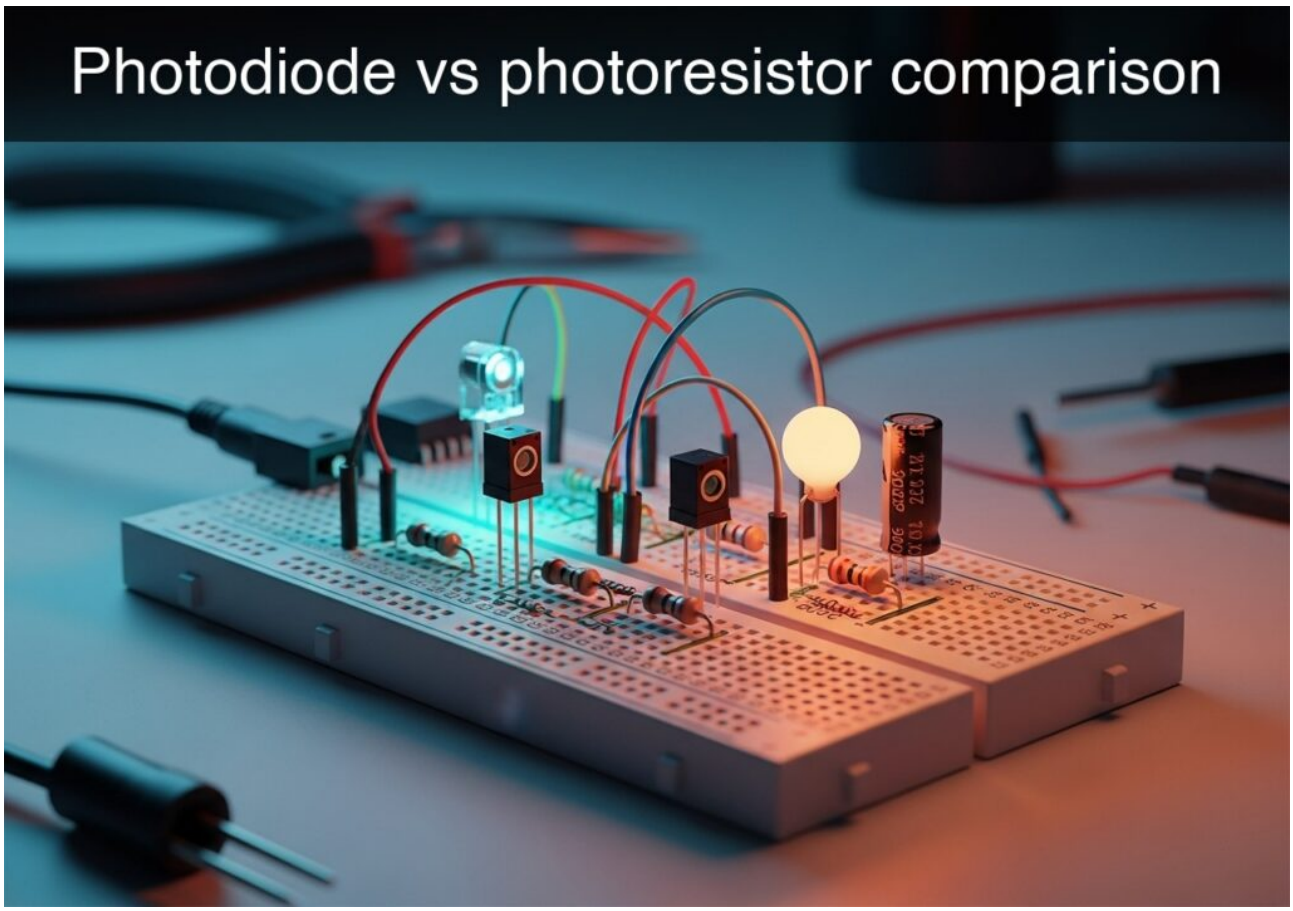
Master Analog Electronics by building a non-contact RPM sensor. Use a Photodiode to detect rotation and generate clean digital pulses for motor speed control.

Practical case: Basic Infrared Light Barrier



Master Analog Electronics by building a light beam alarm. Use a Photodiode to detect interruptions and trigger a 0.7V signal that lights up a security LED.

Practical case: Photodiode vs photoresistor comparison



Master Analog Electronics by comparing sensor speeds. Build a circuit using a Photodiode and LDR to observe sharp square waves versus slow voltage curves.