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The motivation behind this Capstone Design project was to develop a low-cost motion indicator to monitor the displacements that can occur in the foundation of utility-scale wind turbines. Currently there are limitations with visual inspection and even if technicians are properly trained they may miss a foundation in the early stages of failure. Likewise, electronic monitoring is cost prohibitive. The goal for this project was to create a sensor that would record motion, be easy for the technician to read, and indicate vertical and horizontal deflections in a range of .015" - .05". The team developed two designs that fulfilled the requirements for indicating tower displacements as small as 1 mm up to 6 mm. The project has led to an invention disclosure and a provisional patent application. During the course of the project, the developed models were prototyped and are currently going through further optimization in anticipation for field trials.

