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IN COLLABORATION WITH
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LOW-COST VIRTUAL REALITY MICROPHONE

Interest in producing immersive virtual reality content is growing, but the price point for the necessary tools is high. Cooper Union students are collaborating with the NYU Immersive Audio Group to develop a low-cost, high-quality first-order ambisonics (FOA) microphone based on low-noise microelectromechanical systems (MEMS). Cooper Union students designed, fabricated, and tested the frequency and directivity response of a MEMS FOA microphone. To facilitate high resolution directivity response measurements, Cooper Union took the lead in the design of a low-cost, automatic rotating microphone mount. The automatic control of this platform was integrated into an in-house, MATLAB-based acoustic measurement library, allowing the user to generate polar plots at resolutions down to 1.8 degrees. Subjective assessments revealed the MEMS FOA mic performed remarkably for its price point.

