**3D Spectrum Sensing Map via Drone Mounted Receiver**  
U MAT 02

**Abstract**This project seeks to develop and test a low-cost, easy to use approach to signal mapping. The proposed objective will be accomplished by mounting an Android mobile device on a 3DR Solo drone. Data will be collected via a signal strength measurement app, outputted to a .csv file. The program Octave will be used to place the data points into three dimensional space. At this point, a custom written interpolation algorithm uses the nearest neighbor node signal strength theory to fill in the space where no data is collected. All of this data is then placed onto a 3D graph, for user end visualization. The applications of this project are fourfold. Firstly, this approach will allow for the identification of signal leakage beyond designated broadcasting bands. Secondly, this approach will allow an optimization of signal output based on nearby topography. Thirdly and fourthly, this approach will allow for ease of troubleshooting, as well as general diagnostics.