Josh Thompson
GIS and Remote Sensing

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A module on **Geographic Information Systems (GIS) and Remote Sensing** in my geography undergraduate degree at Loughborough took work I had learned about at school further, introducing me to the power of spatial analysis. For the first time, I had the opportunity to use GIS in real-world settings. GIS helps us visualise and facilitate analysis on scales that would be impossible to do by field research and allows users to identify trends and relationships that support data-informed decisions.

For the module, we focussed on the Rondônia region in the Amazon rainforest and measured vegetation change across twenty years. We used satellite imagery to measure vegetation change by using the Normalised Difference Vegetation Index. By using GIS we were able to calculate the amount of vegetation loss and identify vital insights into hotspots of deforestation.

Studying for this module inspired my dissertation topic, where I looked at how we could improve the sustainability of palm oil plantations in Borneo. GIS is far more than just a data management tool, increasingly, artificial intelligence and deep learning techniques are being used for a multitude of new opportunities. My dissertation incorporated such techniques to rapidly identify individual palm oil trees!

Geography, as a subject is only growing in importance and GIS, has the capabilities to help solve some of the most challenging environmental problems of our time. I would strongly encourage you to consider studying geography at university – especially if you are someone that wants to help make a real impact in the world!