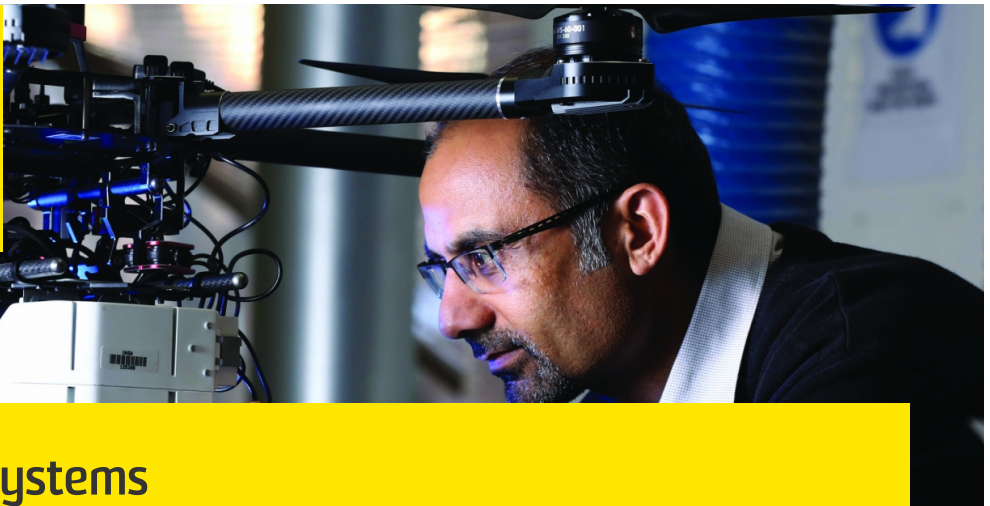




**UNSW**  
SYDNEY



## Advanced Sensing Systems

**Advanced sensing systems provide an integrated solution for environmental and safety monitoring across a range of industries, including mining, defence, agriculture, forestry, food processing and health.**

### Competitive advantage

- Expertise in design of application-specific sensor hardware, data acquisition using various platforms including satellites and drones, and customised algorithms to convert the data into solutions
- Environmental monitoring expertise in challenging environments—remote water quality, sensitive ecosystem health, remote monitoring for temperature, pressure, gases etc
- Safety monitoring expertise, including structural deformation, hazardous spillage detection, in situ sampling and warning systems
- Expertise in machine vision—real-time object tracking, target recognition, resolving patterns, image enhancements, and 2D- and 3D-mapping

### Impact

- Improved environmental sensing and safety management

### Successful applications

- A drone-based scanning system for mapping structural parameters of pit walls, Glendell coal mine, Glencore
- Drone generated spatial data processing software, Agronomeye
- Drone based hyperspectral mapping system to monitor sensitive swamp vegetation, Russel Vale colliery, WCL
- Remote water sampling using drones, Glendell coal mine, Glencore
- Thermal hotspot mapping using drones, Ulan Coal mine

### More Information

Dr Simit Raval

School of Minerals and Energy  
Resources Engineering

T: +61 (0) 2 9385 5005

E: [simit@unsw.edu.au](mailto:simit@unsw.edu.au)

UNSW Knowledge Exchange

[knowledge.exchange@unsw.edu.au](mailto:knowledge.exchange@unsw.edu.au)

[www.capabilities.unsw.edu.au](http://www.capabilities.unsw.edu.au)

+61 (2) 9385 5008