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Available Honours research project  
for Bachelor Engineering (Honours) (Electrical, Avionics) Students

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## Object Range Estimation in Dynamic Visibility Conditions using Atmospheric Propagation Models

Supervisor: Dr. Luis Mejias, Queensland University of Technology (QUT) and ARCAA

This project aims to determine how knowledge about light propagation through the atmosphere can be used in specific cases to improve visual perception of distant moving objects from a moving platform. This work will be evaluated in the context of an aircraft detection problem.

In this project you will investigate various atmospheric models to extend Nayar [1] models to a dynamic airborne context. This project will create novel algorithms that account for the dynamic nature of a moving camera onboard an aircraft.

**Funding:** The successful student will be **eligible for the Australian Postgraduate Awards (\$22,500 per annum for 3 years, tax exempt)**. He/she may also be eligible for QUT BEE top-ups for honour students up to a maximum of \$40,005. per annum, tax exempt.

### **How to apply for this position:**

Applicants should send **a CV, obtained grades and a cover letter** detailing their suitability to Dr. Mejias via email to [luis.mejias@qut.edu.au](mailto:luis.mejias@qut.edu.au)

For further information on the project or for an informal discussion, please contact:  
Dr. Luis Mejias, Tel: (+61) 0435 009 192, Email: [luis.mejias@qut.edu.au](mailto:luis.mejias@qut.edu.au)

## References

- [1] S.K. Nayar and S.G. Narasimhan, "Vision in bad weather," in *Computer Vision, 1999. The Proceedings of the Seventh IEEE International Conference on*, 1999, vol. 2, pp. 820–827 vol.2.