

# ICRAR & ICRAR-Pawsey Summer Studentships 2018-2019

## Project Proposal

Project Details	
Project Title	<b>Source Finding using Unsupervised Machine Learning</b>
Primary Supervisor	Kevin Vinsen
Primary Supervisor Availability	<b>Available all the time</b>
Contact Details	0435 164 060 kevin.vinsen@icrar.org
Additional Supervisors & Contact Details	Sam Foster sam.foster@icrar.org
Additional Resources Required	None
Pawsey Centre Hardware Use	None
Software Required	<p>List all software requirements here.</p> <p>Student Desktop Requirements:</p> <ul style="list-style-type: none"> <li>• Python 3.6</li> <li>• PyTorch</li> </ul> <p>Pawsey Centre software installations required:</p> <ul style="list-style-type: none"> <li>• None</li> </ul>
Student Location for project	ICRAR-UWA
Project Description	<p>(150-200 words)</p> <p>TheSkyNet Sourcefinder has produced over 100GBs of data, using two different source finding algorithms. The purpose of this project is to develop an unsupervised machine learning algorithm to perform a blind search on the data for interesting patterns.</p>
Student Attributes	
Academic Background	Machine Learning Data Science Astronomy (Optional)
Computing Skills	Python 3.6 Linux SQL
Training Requirement	LaTeX
Project Timeline	
Week 1	<b>Pawsey training (or inductions and project introduction)</b>
Week 2	Investigate the source data
Week 3	Investigate existing unsupervised machine learning algorithms
Week 4	Develop the algorithm and format the data
Week 5	Develop the algorithm and format the data

Week 6	Develop the algorithm and format the data
Week 7	Develop the algorithm and format the data
Week 8	Final testing
Week 9	Write final report
Week 10	<b>Final Presentation and Reporting</b>