THE UNIVERSITY OF
WESTERN
AUSTRALIA

**Position Description**

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| **Position Title:** | Software Engineer |
| **Position Classification:** | Level 8 |
| **Position Number:** | 318313 |
| **Faculty/Office:** | Faculty of Engineering and Mathematical Sciences |
| **School/Division:** | School of Physics, Maths and Computing |
| **Centre/Section:** | Int Centre for Radio Astronomy Research (ICRAR) |
| **Supervisor Title:** | Senior Principal Research Fellow |
| **Supervisor Position Number:** | 308479 |

## Your work area

The International Centre for Radio Astronomy Research (ICRAR) is an equal joint venture established in 2009 between Curtin University and The University of Western Australia (UWA). ICRAR is one of the lead Australian organisations participating in the international Square Kilometre Array (SKA) Project. The Centre is engaged in research and training in radio astronomy, astrophysics, simulations, data intensive astronomy, engineering, SKA pre-construction and bridging activities. ICRAR has a very active education and outreach program and also works closely with international and Australian collaborators including partners from industry. ICRAR was independently assessed to be among the top five radio astronomy Centres in the world.  The Centre is also a node of the ARC Centre of Excellence for All Sky Astrophysics in 3 Dimensions (ASTRO 3D).

## Reporting structure

Reports to: Senior Principal Research Fellow

## Your role

As the appointee you will, focus on porting and optimising existing algorithms to accelerators like GPUs, or implement new algorithms on these platforms and work within our ICRAR Data Intensive Astronomy team on various software projects. In particular you will expand our expertise in the area of optimised GPU algorithms. You are also encouraged to research the applicability of other accelerator/processor technologies for certain algorithms.

## Your key responsibilities

Analyse existing algorithms, identify, plan and execute the required steps to port or re-implement these algorithms to run on GPUs

Actively collaborate with researchers and other software developers within ICRAR/UWA, CSIRO and other partner institutes and companies

Participate and in some cases lead the development of the various science data reduction components and integrate them into our existing workflow system

Produce and maintain proper software testing and documentation, both technical and user level

Develop and provide training for the users of the software components

Other duties as directed

## Your specific work capabilities (selection criteria)

Relevant tertiary qualification preferably a Degree in software engineering or computer science or demonstrated equivalent competency

Substantial and extensive relevant experience in GPU algorithmic development and optimisation

Demonstrated ability to architect, design and develop high quality software in multiple languages, including C/C++, Python, CUDA, OpenCL, OpenACC and/or others

Demonstrated experience with High Performance Computing and/or Cloud computing

Demonstrated experience with scientific algorithms

Demonstrated experience in large scale complex software development projects is desirable

Excellent written and verbal communication skills and high level consultation and negotiation skills Ability to self-lead and manage, demonstrate initiative and work productively as part of a team

Demonstrated ability to work effectively in distributed scientific or commercial collaborations

## Special requirements (selection criteria)

There are no special requirements

## Compliance

Workplace Health & Safety

All supervising staff are required to undertake effective measures to ensure compliance with the Occupational Safety and Health Act 1984 and related University requirements (including Safety, Health and Wellbeing Objectives and Targets).

All staff must comply with requirements of the Occupational Safety and Health Act and all reasonable directives given in relation to health and safety at work, to ensure compliance with University and Legislative health and safety requirements.  Details of the safety obligations can be accessed at http://www.safety.uwa.edu.au

Inclusion & Diversity

All staff members are required to comply with the University's Code of Ethics, Code of Conduct and Inclusion and Diversity principles. Details of the University policies on these can be accessed at http://www.hr.uwa.edu.au/policies/policies/conduct/code, http://www.web.uwa.edu.au/inclusion-diversity.