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25 March 2014

Reference for Kelvin Yuan-Shuo Hsu

To Whom It May Concern:

My name is Dr Matthew Whiting, and I am a Research Scientist at CSIRO Astronomy & Space Science. I had the pleasure of supervising Kelvin Hsu from December 2013 - February 2014 as part of our Summer Vacation Student programme, and can happily recommend him on the basis of the work he did, as well as the attitude and enthusiasm he brought to the programme.

Kelvin was working on a project to provide graphical interfaces to an existing piece of software called Duchamp, which gives astronomers the ability to locate & parameterise astronomical sources (typically galaxies identified from emission lines from their neutral hydrogen) within three-dimensional spectral images. The aim was to improve the user's experience in both setting up a Duchamp job, and analysing the results once complete.

Kelvin completed one GUI tool to assist with the setting up of the parameters for a Duchamp search, providing a practical, easy-to-use piece of software that will easily be incorporated into a forthcoming Duchamp release.

He also has built a very impressive graphical interface that allows a user to examine the results of a Duchamp search. This will help the astronomer to make better sense, more quickly, of the results of their search (for instance, quickly identifying whether a given detection is a real galaxy or the result of interference). This was a complex task, requiring understanding of the various data structures and the ability to put together different elements of python programming. This was all the more impressive given Kelvin's prior lack of experience in python. While there is still some work needed for this tool before it is ready for release (the limited time for the summer programme prevented completion), Kelvin has very much broken the back of the task.

I was also very impressed with Kelvin's presentation skills. Part of the summer programme here at CSIRO is a presentation about the students' projects towards the end of the program. Kelvin's presentation was (in my opinion at least) one of the best. He was very confident, and did an excellent job at presenting something that can be difficult (GUI development can be a bit dry compared to some of the astronomy research covered, but he did well in showing how it worked and what it did).

Kelvin's application and dedication to the task shows he has great potential, and I'm happy to recommend him for any future internship or employment.

Yours faithfully,

A handwritten signature in black ink, appearing to read "Matthew Whiting".

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