From: Mr David O’Ryan

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To the selection committee,

4th September 2023

Please find enclosed my application and proposal for the ESA Fellowship Post-Doctoral position. I am currently a 4th year PhD student at Lancaster University, UK and expect to submit my thesis in Q1 of 2023. My current research is focused on the study of galaxy evolution in the context of galactic interaction and merging, under the supervision of Dr Brooke Simmons.

My project proposal for the ESA Post – Doctoral position, entitled -Towards a Statistical Understanding of Galaxy Evolution - , would involve combining the *Hubble Space Telescope* and JWST science archives with ESA Datalabs and Euclid to create and then analyse the largest catalogue of galaxy morphology and ancillary data available anywhere once the combination activity is complete.

I will use a convolutional neural network – *Zoobot* – to make morphological classifications of all objects existing in the *HST* and JWST archives. I will then combine these morphological *catalogues* with the first results of Euclid’s *NISP* instrument to create a full ancillary *catalogue* of morphologies and galactic parameters. (Should this maybe say “ancillary catalogue of morphologies **with** galactic parameters”?) I will then conduct initial analysis of this *catalogue*, (can you say “new inventory” here rather than catalogue for the third time?) measure its selection effects and accuracy, and conduct an in depth trial of its use in the context of galaxy interaction.

My past and present PhD work makes me an eminently suitable person to take on this project. (Or “makes me eminently suitable for this project”)The work in this proposal is primarily a continuation of an internship I conducted at the European Space Astronomy Centre (ESAC) in 2022. This internship gave me experience with ESA Datalabs – where I still have an active account – and with using *Zoobot*. My experience in these areas will substantially reduce the ramp up time that would otherwise be required for this project.

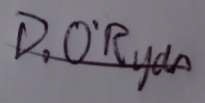
Paragraph missing - presumed dead – Lets discuss? Possibly in the wrong place but also quite confusing?

Due to this works proximity to the archives,(eh?) ESA Datalabs and Euclid, I propose the following to be mentors for this project: Bruno Altieri (Euclid), Guido de Marchi (Data Archives) and Bruno Merin (ML techniques).

For the fully detailed proposition including the timeline and information on how this project links to my previous research experience, please see my proposal documentation. In addition, please find enclosed my CV and full list of publications. These contain links to my contact information and my personal website . Finally, the following people have agreed to send reference letters on request: Brooke Simmons, Bruno Merin and Chris Lintott.

Thank you very much for your time. I am at your full disposal to discuss any aspects of my application and I look forward to hearing from you in due course.

Sincerely,

David O’Ryan