

NICHOLAS LAMBOURNE

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Commonwealth Scientific and Industrial Research Organisation
Clunies Ross Street
Black Mountain ACT 2601
Australia

Dear Hiring Manager,

My name is Nicholas Lambourne and I am a third year undergraduate student at the University of Queensland, enrolled in a Bachelor of Engineering (Hons), majoring in software engineering. This letter accompanies my application for a summer vacation scholarship at the CSIRO Clayton office under the direction of Dr Fanel Donea, whose projects focus on quantum technologies.

I have been enamoured with quantum computing since reading Swiss professor Nicolas Gisin's book *Quantum Chance* in 2016 and have closely followed the rapid development of the QIP industry in Europe and North America, including the development of quantum emulation software by private corporations like Rigetti Computing.

I believe that my educational and professional background has provided me with a skillset uniquely appropriate for this opportunity. My studies at the University of Queensland (UQ) have provided me with solid software engineering skills, including the ability to contribute to and maintain large, active codebases as well as construct efficient algorithms. These studies have also instilled in me a healthy respect for comprehensive testing and thoughtful software design. As part of UQ's engineering cohort, I have also been exposed to courses in linear algebra and discrete mathematics, both of which are crucial to producing performant software. During the first semester of 2018 I participated in an exchange program at the University of Connecticut. I chose Connecticut primarily as a result of their agreement to allow me to audit their graduate course in Quantum Computing, taught by Assistant Professor Walter Krawec - a course I thoroughly enjoyed.

In addition to my educational experiences, I have also been involved in academic research during my time as a Winter Research Scholar in UQ's Social Robotics Laboratory under the supervision of Dr Gautier Durantin and Dr Janet Wiles. As a winter scholar I worked on the NgukurrOPIE Indigenous Language Project, producing tools to accelerate the language resource production process. The resulting software was later transferred to the ARC Centre of Excellence for the Dynamics of Language and I was invited to continue my work in the lab. In addition to these duties, I have also recently been engaged by UQ as a tutor for introductory engineering courses and while I have only been in this role for a short time, it has already proved to be a rewarding experience.

In the long-term, I intend on pursuing a career in academia and research, working generally in computer science and more specifically in quantum information processing. After graduating from my undergraduate degree in June 2020, I mean to pursue a PhD in this field. My desire to teach comes from the distinct sense of fulfilment I get out of my experiences tutoring as well as volunteering as a mentor with organisations like DjangoGirls and Robogals. This desire to give back has also led to me becoming an active member of my University's computing society (UQCS), where I have contributed to the organisation of events and have given lightning talks on various technical topics.

Thank you for taking the time to consider my application for this role. Should you require any further information, please contact me at any time via phone (0407 980 730) or email (nick@ndl.im).

Kind regards,

Nicholas Lambourne