

Background

I took a category theory course in 2017 and have read some papers on categorical quantum mechanics.

Expected graduation date

I expect to complete my Ph.D on June, 2021. My research plan includes quantum logic and formal verification of quantum programmes.

Project preference

- Simplifying quantum circuits using the ZX-calculus
- Complexity classes, computation, and Turing categories

Funding

My university provides funding that will cover part of the costs of my visit to Oxford.

He Feifei

Curriculum Vitae

PERSONAL DETAILS

Birth February 17, 1989
Address 135 W.Xingang Road, Guangzhou, China
Phone (86) 131-6631-1839
Mail otome.green@gmail.com

EDUCATION

Ph.D., logic 2016-Present
Sun Yat-sen University

- Research work on quantum computing and logic, 2018-present
- Full-time coursework, 2016-2018

Bachelor of engineering in computer science 2007-2011
Shanghai Jiao Tong University

EMPLOYMENT

Software Engineer 2011-2015
Embedway Technology Inc., Full-time
Designed and implemented management systems for enterprise network services.

LANGUAGES

Chinese Mother tongue
English Fluent, IELTS score: 7.5

REFERENCES

Available upon request

STATEMENT OF PURPOSE

He Feifei
otome.green@gmail.com

I am currently conducting research on the extension of a quantum Hoare-like logic as part of my dissertation. A significant part of the axiomatisation of this logic comes from the category-theoretical work done by Abramsky and Coecke, which helps to analyse teleportation and other quantum protocols. What attracts me is the connection between quantum logic and categorical quantum mechanics, the latter associated with an elegant diagrammatic language, and I see a possibility that it will help me to think of new ideas for further research. For a better understanding of this connection, I think it necessary to learn about applied category theory, as I need to understand the underlying approach of using categories in quantum mechanics, computation, and other scientific areas.

When it comes to future plans, I have a strong tendency to study logic and foundations, a wider field of research, where the category theory and its application will be a relevant topic. I believe that the ACT2019 School can contribute a lot to my current research work as well as my long-term career.