



Institute of Operations
Research and Analytics

PhD PROGRAMME

in Operations Research and Analytics

ABOUT NUS & IORA

The National University of Singapore (NUS) is ranked consistently as one of the world's top universities and is recognized for its transformative education, experiential learning and impactful research.

Established in November 2016, the Institute of Operations Research and Analytics (IORA) conducts cutting-edge research on the optimization, analysis and management of service systems, including model formulation, algorithm design, analysis of service strategies, and software development. As part of the NUS's Smart Nation Research Cluster, IORA works with various partners to develop innovative measures and inventive solutions for real-world issues.

The IORA faculty is made up of strong Operations Research and Analytics expertise housed in various departments including computer science, economics, engineering, mathematics, statistics, analytics and operations. Taking a multidisciplinary approach to research, our students learn from faculty members at the forefront of their respective fields. Graduates are trained to be conversant in the new science of data driven analytics, with expertise in Operations Research, Machine Learning and Computational Techniques, capable of discovering new solutions and models to make smart inference from high dimensional and voluminous data.

An abstract geometric pattern consisting of numerous small dots connected by thin lines, forming a complex network or mesh. The pattern is light orange and occupies the bottom half of the page, extending from the left edge towards the right.



THE PhD PROGRAMME

IORA offers a *multidisciplinary* Doctor of Philosophy (PhD) programme with the area of specialization in Operations Research (OR) and Analytics. The programme aims to provide students with a rigorous training in the fields of OR and Analytics, empowering them to contribute to advanced research and make a positive impact on society.

THE NUS PhD EXPERIENCE

- Pursue a rigorous PhD education in NUS, a leading global university centered in Asia.
- Work with renowned researchers from multidisciplinary backgrounds including business, computing, economics, engineering, mathematics, and statistics.
- Access to extensive resources of the university.
- Participate in research attachments and conferences with financial support.

CAREER PROSPECTS

Graduates of the interdisciplinary PhD programme can look forward to academic careers in the universities around the world and positions in the public sector and industry including IT, healthcare, manufacturing, systems design, transport etc.



FINANCIAL SUPPORT

NUS RESEARCH SCHOLARSHIP

The NUS Research Scholarship is awarded to outstanding graduate students for research leading to a higher degree at the University.

- Full tuition waiver and a monthly stipend of S\$3,000/ S\$3,400/ S\$3,800 for international student/ Singapore Permanent Resident / Singapore Citizen.
- Additional stipend of S\$500 per month after passing the PhD Qualifying Examination.
- The scholarship is tenable for 1 year in the first instance and is renewable per semester up to a maximum of 4 years, subject to the student's satisfactory progress and performance.

OTHER SCHOLARSHIPS

Fellowships are awarded to PhD candidates who show exceptional promise or accomplishment in research and academic studies.

OTHER FINANCIAL SUPPORT

- Conference support for up to 4 trips during candidature, capped at S\$3,000 per trip
- Eligible students may receive financial support for living expenses for overseas research attachment (up to one semester)
- Full-time students may claim up to S\$200 per year for IT and book expenses from year 1 to year 5



ADMISSION REQUIREMENTS

- Minimum of a good Bachelor's degree in the relevant discipline (e.g. Computer Science, Engineering, Economics, Mathematics, Operations Research, Statistics etc.);
 - TOEFL/ IELTS for foreign applicants whose medium of university instruction is not in English;
 - GRE for foreign applicants;
 - Admission is on a competitive basis.
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PROGRAMME STRUCTURE

- Complete a minimum of 40 MCs graduate level modules comprising **3 essential modules** (4 MCs each) and **7 elective modules** (4 MCs each) by the end of 4th year.
Students will select elective modules from the following prescribed elective lists:
OR Methods, Data Analytics, OR Modeling;
- Maintain a minimum Cumulative Average Point of 4.0 (out of 5.0) for the required modules;
- Pass PhD Qualifying Examination by the end of 2nd year;
- Complete a thesis and oral defense to the satisfaction of the examination panel; and
- Complete the above requirements within the maximum candidature of 5 years.



APPLICATION

To apply, please submit an application via the **online portal**.

The details are available at: <http://iora.nus.edu.sg/education/application.html>

The application closing date is **15 December**, for admission in the August term of the following year.

APPLICANT'S CHECKLIST

Applicants must provide the following supporting documents as part of their application:

- A copy of citizenship certificate for Singapore Citizens or Singapore PRs / passport page showing nationality and personal details for international applicants;
- A recent passport-sized photograph;
- Resume;
- Research proposal/ Statement of purpose (1-2 pages);
- A copy of undergraduate and/or graduate degree scroll;
- A copy of undergraduate and/or degree transcripts;
- Recommendation letters from two referees;
- A copy of TOEFL/ IELTS score report for applicants whose medium of university instruction is not in English;
- A copy of GRE/ GMAT score report for international applicants (Optional)

STUDENTS' TESTIMONIALS

The vibrant research environment in IORA offers the opportunity for students to work and learn from the faculty members of different backgrounds. The faculty members are not only experts of various research areas but also **good mentors**. In addition to imparting knowledge on Operations Research, the faculty members introduce active research topics which **excite me to explore further** on these topics. Beyond the classroom, NUS provides students with an **enriching campus life** and **good amenities**.

CHEN LI, PhD Student

My experience in the IORA PhD programme has been fantastic. Pursuing a PhD is a difficult endeavor, but the programme provides ample resources and support to help me achieve my goal. The faculty members here are **welcoming and approachable**, always open to discussion about research and life in general. They are **friendly and go out of their way to care for the students**. This culture makes IORA feel like a big extended family and I feel right at home at the institute.

Being at NUS, and particularly IORA, there are great opportunities available for students to pursue their area of interest due to the **interdisciplinary nature** of the programme. I have been able to take courses in a variety of fields taught by excellent teachers, attend seminars by leading experts at the pinnacle of their area of research, and work with prestigious faculty members from a wide range of research interests. Few institutes in the world can boast of providing such an intensive and comprehensive education. It is a **challenging, yet fulfilling experience**.

As a Singaporean, studying at IORA allows me to still be near my family and loved ones, while having access to a world class research programme and institute. Singapore is known for its diverse food offerings and I get to enjoy my favorite hawker centres and local cuisines.

I could not have been happier studying at IORA.

TAN HONG MING, PhD Student

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FOR MORE INFORMATION, PLEASE VISIT
<https://iora.nus.edu.sg/about-the-programme/>

