

XIAOLU HOU

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EDUCATION

Ph. D. Candidate in Mathematical Sciences

Nanyang Technological University(NTU), Singapore

Major: Mathematics

Advisor: Prof. Frédérique Oggier

Jan 2013 – Jan 2017 (Expected)

CGPA: 5.00/5.00

B. S. in Mathematical Sciences, Specialization in Pure mathematics

NTU, Singapore

August 2009 – Jan 2012

First-Class Honor with CGPA 4.96/5.00

EXPERIENCE IN RESEARCH

Graduate Student at NTU

Jan 2013 – present

Supervisor: Nanyang Asst. Prof. Frédérique Oggier

Research Topics:

- Construction of modular lattices from number fields.
- Construction of modular lattices from quaternions.
- Construction of modular lattices from linear codes by construction A.

Project Officer at NTU

Feb 2012 – Jan 2013

Supervisor: Nanyang Asst. Prof. Frédérique Oggier

Research Topics:

- Construction of modular lattices from number fields.

PUBLICATIONS

Preprint:

- P1. “Construction and Secrecy Gain of a Family of 5-modular Lattices,” Xiaolu Hou, Fuchun Lin and Frédérique Oggier, to appear in IEEE Information Theory Workshop 2014, Hobart, Tasmania, Australia.

Journal:

- J1. “Hilbert spaces of entire Dirichlet series and composition operators,” with Le Hai Khoi and Bingyang Hu, J. Mathematical Analysis Applications, vol. 401, no. 1, pp. 416–429, 2013.
- J2. “Composition operators on Hilbert spaces of entire Dirichlet series,” with Le Hai Khoi and Bingyang Hu, C. R. Acad. Sci. Paris, Ser. I 350, no. 19–20, pp. 875–878, 2012.
- J3. “Some properties of composition operators on entire Dirichlet series with real frequencies,” with Le Hai Khoi, C. R. Acad. Sci. Paris, Ser. I 350, no. 3–4, pp. 149–152, 2012.

HONORS

- Awarded Nanyang President’s Graduate Scholarship, a competitive and prestigious scholarship scheme for outstanding graduates – Jan 2013 to Jan 2017.
- Awarded Lee Kuan Yew Gold Medal, the most prestigious award in NTU, which is given to the top student in each degree programme of the graduating cohort who has excelled in general proficiency and has obtained a First Class Honors – Jun 2012.
- Awarded Dean’s list, which is for the top 5% of the cohort every academic year – 2009-2010, 2010-2011, 2011-2012.
- NTU President Research Scholar and participated in URECA, which is by invitation only to the most academically able second and third year undergraduate – 2010-2011.
- Awarded SM2 Scholarship for undergraduate studies at NTU through a selection with exams and interview – 2009-2012.

SKILLS

<u>Language</u>	<u>Programming Languages</u>	<u>Tools</u>
<ul style="list-style-type: none"> • English (<i>Fluent</i>) • Mandarin (<i>Native</i>) 	<ul style="list-style-type: none"> • C (<i>basic</i>) 	<ul style="list-style-type: none"> • MATLAB (<i>basic</i>) • Sage (<i>Intermediate</i>) • L^AT_EX (<i>Intermediate</i>) • KASH (<i>Intermediate</i>)

OTHER SCIENTIFIC AND SOCIETAL IMPACT

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- Lecturer for seeNTU, a premium enrichment programme designed for pre-tertiary students to attend lectures, seminars and laboratory sessions under the tutelage of NTU staff – June 2014
 - Judge for Singapore International Mathematics Challenge 2014 – May 2014
 - Co-organizer for reading group in algebraic number theory – Aug 2013 to present
 - Lecturer for seeNTU – June 2013
 - Lecturer for Malaysian Chinese Independent Secondary School Teachers Mathematics Workshop – Aug 2012
 - Lecturer for training camp for undergraduate students joining International Mathematics Competition – May 2012
 - Judge for Singapore International Mathematics Challenge 2012– May 2012
 - Lecturer for Math Magic Hour, an undergraduate mathematics seminar for students – March 2012

TEACHING EXPERIENCE**Nanyang Technological University, Singapore:**

- Teaching Assistant for Linear Algebra and Calculus for Engineering Math, an introductory course of math for first year engineering students, three tutorials per week, involved in grading assignments and quizzes – Aug 2012 - Dec 2012

UNDERGRADUATE PROJECTS**Supervised Independent Study at NTU**

Aug 2011 – Nov 2011

Supervisor: Nanyang Asst. Prof. Frédérique Oggier*Research Topics:*

- Algebraic Number Theory
 - Studied "Algebraic Theory and Fermat's Last Theorem by Ian Stewart and David Tall.

Final Year Project and its Continuation at NTU

Oct 2011 – Jan 2013

Supervisor: Dr. Le Hai Khoi*Research Topics:*

- Composition operators on entire Dirichlet series with real frequencies.
- Composition operators on Hilbert spaces of entire Dirichlet series.
 - Publications J1,J2,J3.

Undergraduate Research Experience in Mathematical Sciences at NTU

May 2011 – Aug 2011

Supervisor: Prof. Peng Gao*Research Topics:*

- L-functions and their properties.
 - Studied "Multiplicative Number Theory I. Classical Theory" by Hugh L. Montgomery, R.Vaughan.

Undergraduate Research Experience on Campus(URECA) at NTU

Oct 2010 – Jun 2011

Supervisor: Dr. Le Hai Khoi*Research Topics:*

- Bohr's Theorem for Classical Dirichlet Series and its generalizations.
 - Studied the abscissas of Classical Dirichlet Series and investigated the proof for Bohr's Theorem.