

CURRICULUM VITAE

PHEMMATAD TANSOONTORN

Date of Birth: September 22, 2000
E-mail: prame_tansuntorn@hotmail.com

EDUCATION

- 2023–2024 MSc in Mathematical Sciences, **University of Oxford**.
Dissertation Topic: *Serre–Tate Theory*
Supervisor: Lukas Brantner
In the dissertation, I wrote about the proof of Serre–Tate theorem, starting from the definition of deformation and moduli functors, and then proved the Serre–Tate theorem, following N. Katz. Finally, we gave the application of this theorem in constructing a lift of ordinary abelian varieties from positive characteristic to characteristic zero.
- 2019–2023 Bachelor of Science (Mathematics), **Khon Kaen University**.
Bachelor project: *Counting Umbilical Points on Generalised Fermat Cubic Surfaces*
Advisor: Nithi Rungtanapirom
In this project, I use the technique of P. Breiding, K. Ranestad, and M. Weinstein¹ to count the number of complex umbilical points on Fermat cubic surfaces of the form $ax^3+by^3+cz^3=1$. There are 12 complex umbilical points on a general Fermat cubic surface.

RESEARCH EXPERIENCE

Summer Projects

The following projects were completed as a part of the Development and Promotion of Science and Technology Talents Project (DPST) scholarship programme, where I explored a mathematical topic of interest and wrote a report under the guidance of a professor during summer vacations.

- Summer 2022 **Klein’s Theorem on Quadric Hypersurfaces**
Advisor: Nithi Rungtanapirom
- Summer 2021 **Categorical Proof of the Seifert–van Kampen Theorem**
Advisor: Wijarn Sodsiri
- Summer 2020 **Lattices and Their Representations**
Advisor: Udom Chotwattakawanit

⁰Updated October 23, 2024

¹P. Breiding, K. Ranestad, and M. Weinstein, *Critical Curvature of Algebraic Surfaces in Three-Space*, <https://arxiv.org/abs/2206.09130>

HONORS

Awards

- **Professor Dr.Tab Nilanidhi Foundation Outstanding Undergraduate Award**, 2020. Awarded to first-year science students from each university in Thailand with the highest GPA.

Competitions

- **XXVII International Philosophy Olympiad**, 2019: participated.
- **Thailand Mathematical Olympiad**: Won bronze medals in 2017 and 2018.

TEACHING EXPERIENCE

- **Supervision in Mathematics 2022 Programme**, Khon Kaen University, August 2022-.
I was a tutor for the programme supporting first-year mathematics majors in their studies at Khon Kaen University. I tutored calculus and proof writing for four hours per week, together with review sessions, for a period of two semesters.

ACTIVITIES

- Leader and organizer for the **Reading Group in Differential Geometry**, a local student study group whose members met weekly to give a presentation and discuss materials from selected textbooks in differential geometry.

SKILLS & INTERESTS

English: 8.0 Academic (Taken 25 July 2023)

- **LEAN Theorem Prover**
 - Experience in formalising proofs of some basic results in number theory in LEAN