

Takla Nateeboon

CONTACT INFORMATION

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EDUCATION

University of Calgary

M.Sc., *Mathematics and Statistics* (September 2023 - July 2025)

- Overall GPA: 3.54/4

Mahidol University

B.Sc., *Physics* (August 2019 - May 2023)

- Overall GPA: 3.92/4

RESEARCH EXPERIENCE

Entropy for classical channels (November 2023 - Present)

- Supervised by Prof. Gilad Gour
- Studying majorization relation and the axiomatic approach to define classical channel entropy

Quantum memories (June 2022 - June 2023)

- Mentored by Asst. Prof. Sujin Suwanna
- Studying decoherence effect on quantum memory performance
- Applying the theoretical model to evaluate hexagonal boron nitride defects

Quantum dynamics (May 2019 - May 2021)

- Mentored by Asst. Prof. Sujin Suwanna
- Developing a heuristic model to study how Wick rotation affects on quantum random walk

PUBLICATIONS

- [1] G. Gour, D. Kim, T. Nateeboon, G. Shemesh, and G. Yoeli, "Inevitable Negativity: Additivity Commands Negative Quantum Channel Entropy", *Phys. Rev. A* **111** 052424 (2025), doi:[10.1103/PhysRevA.111.052424](https://doi.org/10.1103/PhysRevA.111.052424)
- [2] T. Nateeboon, C. Cholsuk, T. Vogl, and S. Suwanna, "Modeling the performance and bandwidth of single-atom adiabatic quantum memories", *APL Quantum* **1** 026107 (2024), doi:[10.1063/5.0188597](https://doi.org/10.1063/5.0188597)

CONFERENCE TALKS

- [1] G. Gour, D. Kim, T. Nateeboon, G. Shemesh, and G. Yoeli, "Classical channel entropy", *Alberta mathematical dialogue 2025*, University of Calgary, Calgary, Canada – May 1-2, 2023
- [2] T. Nateeboon, C. Cholsuk, T. Vogl, and S. Suwanna, "Effects of cavity and atomic decay rates on efficiencies of quantum memory", *Condense Matter and Quantum Matierial 2023*, IOP, Birmingham, UK – May 28-30, 2023
- [3] T. Nateeboon and S. Suwanna, "Partial Wick Rotation in Quantum Random Walk", *Siam Physics Congress 2021*, Thai Physics Society, Online– May 24-25, 2021

OTHER PRESENTATION

Group meeting presentations

Presenting and leading discussion on the following topics Probability vector majorization, relative majorization, conditional majorization, and their monotones. (Oct 2024 - Presents)

TEACHING EXPERIENCE	Graduate Assistance (Teaching) (Sep 2023- Present) <ul style="list-style-type: none"> • Giving tutorials, staff at Math Help Centre, and grading for courses offered by Department of Mathematics and Statistic at the University of Calgary • The courses are Linear Methods I, Calculus II, Calculus III, and Differential Equations for Scientists and Engineers. 	
TRAININGS	<p>Research visit (February-April, 2023)</p> <ul style="list-style-type: none"> • at the Friedrich Schiller University Jena • host by Prof. Tobias Vogl and the integrated quantum system research group • developing a quantum memory model for adiabatic-type quantum memories • observing experiments in quantum optics and photonics <p>Quantum Thermodynamics Summer School (August 23-27, 2021)</p> <ul style="list-style-type: none"> • I attended an online part of this hybrid event. • Introduction to open quantum evolution, resource theory, and quantum information. • Hosted by ETH Zurich and Squid (Schools for Quantum Information Development) 	
SCHOLARSHIPS	<p>Junior Science Talent Project's Scholarship from National Science and Technology Development Agency, Ministry of Higher Education, Science, Research and Innovation – (2019-2023)</p> <ul style="list-style-type: none"> • monthly stipend and tuition fee • A nation-wide and highly selective program supporting science and technology students in domestic academic institutions <p>Science Classrooms in University-Affiliated School Project's Scholarship (SCiUS) from Ministry of Science and Technology of Thailand – (2016-2019)</p> <ul style="list-style-type: none"> • a government funded program which admit the selected students to a specialized STEM highschool • covered the tuition fee, meals, dormitory, and extracurricular activities 	
AWARD	<p>Physics senior project competition won and awarded from the Siam Physics Society - June 2023</p> <ul style="list-style-type: none"> • competitive program for undergraduate students nationwide. • the prize included 25,000 THB of cash and a Princess Galyani Vadhana trophy <p>Popular award for poster session in SCiUS Forum from Ministry of Science and Technology of Thailand – 2018 Voted by students and staff in a nation-wide science project competition</p>	
SKILLS	<p>Language</p> <ul style="list-style-type: none"> • Thai (Native) • English (Advanced) - IELTS 7.5 • German (Beginner) 	<p>Computer languages</p> <ul style="list-style-type: none"> • LaTeX • Python (Numpy, Pandas) • HTML, Javascript, CSS