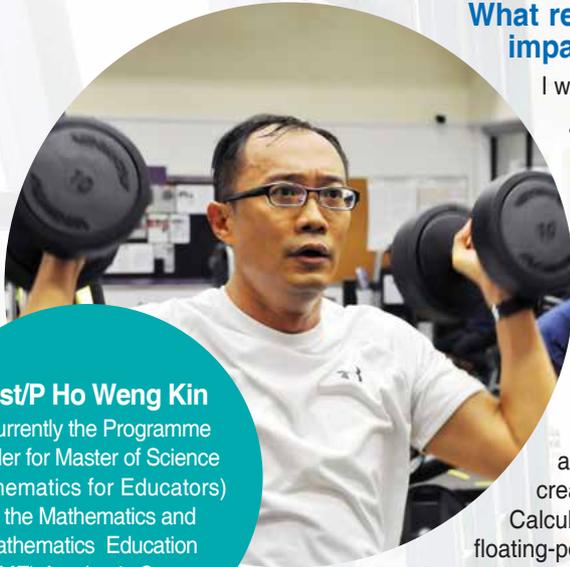


# Getting To Know Our Professors

## Asst/P Ho Weng Kin



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is currently the Programme Leader for Master of Science (Mathematics for Educators) at the Mathematics and Mathematics Education (MME) Academic Group.

### What research area(s) are you working on now? How does it impact your work at NIE?

I wear three hats in terms of research, namely:

- *Mathematics*: my research in Domain Theory – a branch of Topology<sup>1</sup> dealing with non-Hausdorff topologies on partially ordered sets;
- *Computer science*: I manufacture semantics-models for functional programming languages;
- *Mathematics education*: I explore and apply new pedagogies (e.g., flipped classroom, and reading mathematics at tertiary level), in enhancing mathematics learning, especially at the pre-university and tertiary levels.

My collaboration with many renowned domain-theorists resulted in the solution of some open problems in Domain Theory. NIE's focus on academic research creates a supportive and conducive environment for creativity. One major research product I pioneered was ERCE (Exact Real Calculator for Everyone), which was developed to circumvent traditional floating-point errors in computer systems. Subsequently, this work resulted in an industrial collaboration between NIE and one of the world leaders in the production of scientific calculators. My research findings in flipped classrooms have also recently been translated to classroom implementations in certain junior colleges.

### Why is NIE a good place for you to do your work?

Working in a place where you meet your friends and to learn from them – this is what makes NIE a truly ideal place to work in.

### What does NIE offer to higher degree students that is unique?

NIE boasts of the best academic staff members who are simultaneously the experts in their academic fields as well as the best practitioners in the pedagogy of their disciplines. In short, NIE is constantly at the cutting edge of academic and educational research activities, the impact of which is felt worldwide. Higher degree students at NIE are guaranteed in the acquisition of up-to-date content knowledge and research skills through state-of-the-art instructional channels.

### How would you describe NIE higher degree students?

NIE higher degree students form the prototype of a body of inspired, highly motivated and self-directed learners in the 21<sup>st</sup> Century. The majority of part-time students, who are mostly full-time teachers, are now augmented by a steadily growing number of international students who read our higher degree programmes by coursework or research. The richness and diversity of the student body contribute greatly towards an exciting NIE learning community.

### What have you learnt from your students?

My students always turn out to be my best teachers. Very often, some seemingly simple questions that students pose turn out to trigger deep insights into new areas of research. I learnt the most from my PhD students – they never fail to impress me with many brave and creative ideas in research.

### What do you do in your leisure time to de-stress yourself and to keep your mind away from work?

To manage stress, I hit the gym three times a week. My usual one-hour intensive training routine takes place early in the morning before I start work. In addition, I complete at least one 2.4km each month. Engaging in regular physical exercise is important for my health and fitness, and ensures that I remain in tip-top condition, be it at my work or with my family.

<sup>1</sup> An abstract field of mathematics that was recently in the limelight because of its link with quantum Hall effect due to the works of 2016 Nobel Laureates for Physics: Thouless, Haldane and Kosterlitz.