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**キーワード**：モジュライ空間, オペラッド, 導来圏, 非可換幾何

### 現在の研究概要

My background is in algebra, algebraic geometry and category theory. I am interested in interactions among these areas such as:

- Abstract algebraic structures (operads and their generalizations) arising from moduli spaces in algebraic geometry, including moduli spaces of curves and moduli space of hypersurfaces (leading to combinatorics of secondary polytopes).
- Relations between algebraic geometry and representation theory (Hall algebras of categories of coherent sheaves).
- Infinite-dimensional objects in algebraic geometry, especially algebro-geometric model spaces of paths and loops.
- Derived algebraic geometry, in particular derived moduli spaces of algebro-geometric objects and analysis on such derived spaces.
- Non-commutative and categorical methods in algebraic geometry.

### 学生への要望

Ideally, I would like the students wishing to work with me to have some basic background in algebraic geometry (schemes, algebraic curves) and homological algebra (sheaf cohomology). Additional background in category theory (e.g., derived categories, higher categories and so on) would be welcome but not strictly necessary.