# Keyao PENG

*Doctorant*

*Epiphany is not about solving a complex puzzle, but something that was too simple to see.*

## Education

2020– **Ph.D.**, *Institut Fourier, Université Grenoble Alpes*, Grenoble, France
Algebraic geometry, with advisor *Jean Fasel*

2019–2020 **Master**, *Institut Fourier, Université Grenoble Alpes*, Grenoble, France
Mathématiques fondamentales

2015–2019 **Bachelor**, *Taishan College, Shandong University*, Jinan, China
Majored in mathematics

## Academic Activities

Apr 2023 Higher Structures in Geometry and Mathematical Physics, CIRM
Aug 2022 Motivic Geometry Conference, Oslo
Jul 2022 Summer School on the Langlands program, IHES
Jun 2022 Harnessing motivic invariants, Essen
Jun 2022 Conférence A Toulouse pour Simpson, Toulouse
Feb 2022 Logic and higher structures, CIRM
Jan 2022 Linear Logic Winter School, CIRM
Sep 2021 Unifying Themes in Geometry, Lake Como
Sep 2021 The Six-Functor Formalism and Motivic Homotopy Theory, Milano
Sep 2021 Summer School on Derived and Triangulated Categories, Wuppertal
July 2021 Summer School "Illustrating Mathematics", PCMI
July 2021 Summer School "Motivic Homotopy", PCMI
July, Sep 2021 Series Workshops "Expanding Horizons of Inter-universal Teichmüller Theory", RIMS
June 2021 Topos online, IHES
June 2021 Tangent Categories and their Applications, BIRS
2020–2021 Working group on stratified homotopy theory, IAS
July 2020 Summer School "Motivic, Equivariant and Non-commutative Homotopy Theory", IHES

## Teaching

Autumn 2022 **TA**, *Université Grenoble Alpes*, An introduction to algebraic geometry

keyao.peng@univ-grenoble-alpes.fr

## Skill

### Language

| | | | |
|---|---|---|---|
| Chinese | Mother tongue | English | C1 |
| French | B2 | | |

### Computer

| | |
|---|---|
| Language | Typescript, C#, Haskell, Purescript, Lean |
| Animation | Blender, Unity |

## Interest

| | |
|---|---|
| Synthetic Geometry | Study geometry without using analysis, including algebraic geometry, arithmetic geometry, algebraic analysis and more |
| Homotopy | The geometry of "path", like A1 homotopy theory, homotopy type theory |
| Higher Structures | Higher means add homotopy to everything, like set, algebra, category, topos, etc. |

## Paper and Thesis

Keyao Peng. Sheaves and differential equations: An introduction to algebraic analysis, bachelor dissertation, 2019.

Keyao Peng. Milnor-witt motivic cohomology of complements of hyperplane arrangements, 2005.12139, accepted by *Algebraic and Geometric Topology*. 2020.

Keyao Peng. Milnor-witt motivic cohomology and linear algebraic groups, preprint, 2306.05260, main part of phd thesis, 2023.