

# Chen-Wei (Milton) Lin

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## Research Interests

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**Mathematics:** Relative Geometric Langlands, Representation Theory of Metaplectic Groups,  $p$ -Adic Geometry, Higher Category Theory,  $K$ -theory.

## Education

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### **Ph.D. of Mathematics, Johns Hopkins University, 2019-2025 (Expected)**

Supervisor: David Gepner

Thesis title: Geometric and Categorical Aspects of the Langlands Program.

### **Masters of Mathematics, University of Oxford, 2018-2019**

Dissertation Topic: Index of Operators and  $KK$ -theory. Supervisor: Dr. Andre Henriques.

*Fourth year examinations*, ranked 4th in cohort

*Best dissertation award in Mathematics Department*

### **BA Mathematics, University of Oxford, 2015-2018**

Supervisors: Prof. Glenys Luke, Prof. Tom Sanders.

*Preliminary Examinations*, ranked Top 10 of approx. 200 students.

*Third Year Examinations*, ranked Top 10 of approx. 150 students.

## Awards and honors

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### **Gibbs Dissertation Prize for Mathematics**

Awarded by the Oxford Mathematical Institute.

Best Masters of Mathematics dissertation.

### **Alison Sheppard Prize for Mathematics**

Awarded by St Hugh's College, Oxford.

Third year mathematician with highest first class in College.

### **St Hugh's College Scholarship Award**

Awarded by St Hugh's College, Oxford, annually.

*First Class Honors* in each year.

## Invited Talks

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Technical University of Darmstadt, February 7th, 2025.

University of Minnesota Student Number Theory Seminar, November 19th, 2024.

Johns Hopkins University, Topology seminar, September 12th, 2024.

## Seminar Talks

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### **2024**

Topology [E-theory seminar](#), JHU, on *Gross-Hopkins Period Map*.

Number theory learning seminar, JHU, motivic periods, two talks on *Chen's Theorem*.

## 2023

Topology Seminar, JHU, on *Dieudonné modules, following Lurie and Hopkins*.

Topics in representation theory seminar, JHU, on *Uniformization of  $G$ -bundles*.

Topological Quantum Field Theory learning seminar, JHU, on *Classical Field Theory and  $\sigma$ -models*.

Topics in representation theory seminar, JHU, on *Affine Grassmanian*.

[Prismatic cohomology](#) Seminar organizer, with Naruki Masuda and David Gepner.

## 2022

Heegner points study group, JHU, on *Selmer structures and duality*.

Derived deformation theory seminar, JHU, three talks on *Calegari-Geraghty Method in Modularity Lifting*.

Jacquet Langlands Correspondence student seminar, JHU, four talks.

## 2021

[eCHT Hermitian  \$K\$ -theory](#), on *Poincaré Categories*.

[Category theory seminar](#), on *Differential Cohomology and Cohesive Topoi*.

Derived deformation theory seminar, JHU, on formal moduli problems.

Seminar on Stack of Langlands Parameter, joint with U Chicago, on *Representation Stacks*.

[Non-archimedean study group](#), on *Formal schemes and Rigid Generic Fiber*.

## 2020

[DaFra Seminar](#) on Condensed mathematics, a talk on *Solid Abelian Groups*.

[Étale homotopy study group](#), Kings College London, a talk on *Étale Homotopy Obstruction*.

Topological Hochschild Homology Seminar, UIC, two talks on *Construction of THH*.

Spectral Algebraic Geometry Seminar, UIC, two talks on *Spectrally Ringed  $\infty$ -Topoi*.

[eCHT Kan Fall Seminar](#), two talks on chapter 1 of *A Survey of Elliptic Cohomology*, J. Lurie.

[Number Theory Seminar](#), Uni. of Melbourne, two talks on *Contragredient representations*.

[Oberseminar](#), Uni. of Regensburg, a talk on *The  $p$ -complete Frobenius*.

## 2019

Masters presentation, University of Oxford. On *The Atiyah Singer-Index Theorem*.

Reading Group, University of Oxford. On *Model Categories*, Dwyer and Sapinski.

## Professional service

*All roles listed below were conducted at Johns Hopkins University.*

### Graduate Mentorship

(2023-2025) Yashi Jain, serving as a secondary advisor. Primary advisor: David Savitt.

### Undergraduate Mentorship

Spring 2024: Vicky Vanchinathan, mentored a DRP project on understanding addition with transformers.

Fall 2023: Spencer Huang, Dev Lalwani, mentored a DRP project on mechanistic interpretability.

Spring 2023: Oris Zheng, mentored a DRP project on Zariski's lemma in Algebraic Geometry.

Fall 2022: Nick Lombardi: mentored a project on an introduction to the Langlands program.

### Fall 2024

Graduate Algebra, Teaching Assistant.

Introduction to Proofs, Teaching Assistant.

### Spring 2024

[Directed Reading Program](#), Co-organizer.

**Fall 2023**

SOUL Course: Interpretability in AI, Lecturer.

Honors Single Variable Calculus, Lecturer.

Directed Reading Program, Organizer and Mentor.

**Spring 2023**

Calculus III, Head Teaching Assistant.

[Directed Reading Program](#), Co-organizer and Mentor.

**Fall 2022**

Calculus II, Teaching Assistant.

Directed Reading Program, Co-organizer and Mentor.

## Skills

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**Programming Languages:** Python, R, MATLAB

**AI Frameworks:** TensorFlow, PyTorch

**Tools:** Jupyter, Git, LaTeX

**Languages:** Mandarin (native), English (fluent), Ukrainian (elementary proficiency)