Halit Yiğit Gündüz

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Research Interests

I am a PhD student at the University of Birmingham under the supervision of Shohei Nakamura. My research interests lie at the intersections of convex geometry with harmonic analysis and information theory. I am currently working on problems related to maximal operators associated with convex sets and their asymptotic behaviour.

Education

PhD in Pure Mathematics, *The University of Birmingham* *2026–2030 (Expected)*

- **Supervisor**: Shohei Nakamura.

2+2 Joint Bachelor's Degree Programme *2022–2026*

BSc (Hons) Mathematics, *The University of Edinburgh*

- **Honours Classification**: First Class.

BSc Computing Mathematics, *City University of Hong Kong*

- **Classification**: First Class Honours Equivalent.
- **Dissertation (The University of Edinburgh):** *Fourier Restriction Norm Method*.

Publications and Other Writing

- **Bourgain's proof of the circular maximal theorem: an exposition**, with Jonathan Hickman, submitted.
  Preprint: https://arxiv.org/abs/2609.04471.
- **Fourier restriction norm method**, dissertation, *The University of Edinburgh*. Under the supervision of Tadahiro Oh.
  PDF: https://hygunduz.github.io/dissertation.pdf.

Experience

EPSRC Mathematical Research Intern, *The University of Edinburgh* *Jun 2025–Aug 2025*
Supervisor: Dr. Jonathan Hickman

- Awarded an EPSRC funded 10-week research internship as a top-rated candidate for the vacation scholarships at the University of Edinburgh.
- The resulting expository paper on Jean Bourgain's 1986 proof of the circular maximal theorem is found above.

Teaching Experience

Peer Tutor, *City University of Hong Kong* *Jan 2024–Apr 2024*

- Tutored in Calculus & Linear Algebra as part of the Peer-Assisted Learning scheme using Supplemental Instruction.
- Selected as tutor for academic standing (A+ grade or about top 10% in *Enhanced Calculus and Linear Algebra II*).

Course Instructor for UAA Advanced, *Uskudar American Academy* *2022–2023*

- Planned and taught 6-week introductory courses on Group Theory (2022) and Differential Geometry (2023).

Scholarships and Awards

- **University of Birmingham School of Mathematics PhD Scholarship.**
- **Member of HK Tech Tigers:** Awarded to the top 10% of the cohort in City University of Hong Kong.
- **Dean's List:** Awarded for academic excellence in Semester B of year 1 and Semester A of year 2 at City University of Hong Kong.
- **CityUHK Top Scholarship for International Students:** Awarded for academic excellence, maintained 2022–2026.
- **Dr. Herman Hu Scholarship for Joint Bachelor's Degree Programmes:** Awarded to exceptional Joint Bachelor's Degree students from City University of Hong Kong.
- **The University of Edinburgh Scholarship:** Awarded as part of the Joint Bachelor's Degree Programme (2024–2026).