

Younes Mouhib

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French citizen · born 21 August 1998 · ORCID 0009-0009-4338-4933

RESEARCH INTERESTS

Ramsey theory · Combinatorics · Extremal graph theory

EDUCATION

ETH Zürich — MSc in Mathematics Sept 2023 – Aug 2026 (expected)
Zürich, Switzerland

- **Selected coursework:** Convex Optimisation; Network and Integer Optimisation; Structural Graph Theory; Algebraic Methods in Combinatorics; Probabilistic Methods in Combinatorics; Algebraic Geometry; Algebraic Topology; Number Theory.

EPFL — BSc in Mathematics Sept 2018 – July 2023
Lausanne, Switzerland

Lycée Masséna — CPGE (MPSI / MP*) Sept 2016 – July 2018
Classes préparatoires aux grandes écoles, Nice, France

PUBLICATIONS AND PREPRINTS

- [1] Y. Mouhib. *One-Weight Colorings, the Symmetric Class, and Lower Bounds for Hales–Jewett Numbers*. Preprint, [arXiv:2607.02226 \[math.CO\]](https://arxiv.org/abs/2607.02226), 2026. single author
- [2] Y. Mouhib and L. Halbeisen. *Improved Lower Bounds for the Hales–Jewett Numbers via Symmetric Colorings*. Preprint, [arXiv:2606.22155 \[math.CO\]](https://arxiv.org/abs/2606.22155), 2026.

Both works consolidate and extend the MSc thesis. Code and colouring certificates: github.com/ysmouhib/hj-certificates.

RESEARCH EXPERIENCE

Master’s thesis — Bounds on the Hales–Jewett numbers 2025 – 2026
ETH Zürich Supervised by Prof. Dr. Lorenz Halbeisen
Improving Bounds on Hales–Jewett Numbers: Symmetric Colorings, SAT Solvers, Line-Family Variants, and Forcing Structures.

Semester project — Structural translation of the Hales–Jewett theorem 2025
ETH Zürich Supervised by Prof. Dr. Lorenz Halbeisen
From Hypercubes to Sparse Graphs: Structural Translation of the Hales–Jewett Theorem via Monochromatic Stars.

Student seminar — The graph regularity method 2025
ETH Zürich Organised by Prof. Dr. Benny Sudakov

Bachelor project — The subadditive ergodic theorem Feb – June 2023
EPFL Supervised by Prof. Dr. Maria Colombo and Dr. Lucio Galeati

TEACHING EXPERIENCE

Course instructor (PVK-Leiter), Topology June 2026
VSETH, ETH Zürich — Zürich, Switzerland

Homework tutor (grades 9–11) July 2021 – Jan 2023
Collège Villamont & Collège St-Roch — Lausanne, Switzerland

Student mentor Sept 2020 – Feb 2021
EPFL — Lausanne, Switzerland

Science promotion — Science Day in Thun April 2022
EPFL — Thun, Switzerland

LANGUAGES

French (native) · English (fluent) · Arabic (fluent) · Spanish (conversational) · Indonesian (intermediate) · German (beginner).

REFEREES

- Prof. Dr. Lorenz Halbeisen — ETH Zürich (MSc thesis and semester-project supervisor).
- Prof. Dr. Maria Colombo — EPFL (bachelor-project supervisor).
- Dr. Lucio Galeati — University of L'Aquila, formerly EPFL (bachelor-project co-supervisor).

Full contact details available on request.

INTERESTS

Chess: member of SKETHZ (ETH Zürich Chess Club), formerly La Dame Blanche (EPFL); active on Project Euler and Mathraining. **Music:** classical and flamenco guitar (10+ years). **Sport:** martial arts (10+ years).