

Dév Raj Joe Vorburger

Mathematical spirit, scientific curiosity, rhetorical facility, and avid reader.

Interested in philosophy, history, anthropology and quantum physics.

Trilingual from a multicultural Indian and Swiss family.

Born the 15.04.2003

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LANGUAGES

English and French: mother tongues

Virtually native German

Japanese Beginner

EDUCATION

EPFL, Lausanne — Bachelor

September 2021 – July 2024

- Average of 5.64 out of 6 during propaedeutics, maintained during second year
 - Obtained the maximum grade in all courses relating to algebra
- Took additional courses (Lie Algebra in BA3 and Representation Theory in BA4)
- Learnt the basics of C++, Python and MatLab
- Exchange at University of Oslo, Norway (UiO), took masters level courses, notably a second course in Algebraic Topology covering cohomology, higher homotopy groups and an introduction to spectral sequences
 - Obtained the maximum mark in all courses completed during my exchange
- Bachelor project: Algebraic K-Theory, supervised by Prof. John Rognes, UiO

EPFL, Lausanne — Master

September 2024 –

- Masters project: Goodwillie calculus and the derivatives of the identity, supervised by Prof. Scherer
- ECHT course: Spectra and duality by Prof. Petersen

Relevant topics studied

- Homological Algebra including: group homology, spectral sequences and Derived categories with Prof. Rognes (UiO) and Prof. Wyss (EPFL)
- Algebraic Topology at the level of Hatcher with Prof. Scherer (EPFL), Prof. Urech (EPFL) and Prof. Kolderup (UiO)
- Homotopical Algebra up to Bousfield Localization during the SIL internship at EPFL
- Modern Algebraic Geometry: Schemes, sheaves & cohomology of sheaves with Prof. Ottem (UiO), Prof. Filipazzi (EPFL) and Prof. Alapan (EPFL)

EXPERIENCES

“Operads and calculus” workshop in Belfast

April 7th 2025 – April 11th 2025

Member of CQFD, Lausanne — Mathematics association of EPFL

September 2024–July 2025

- In charge of organizing a weekly seminar for students, treating a wide variety subjects from basic category theory to percolation

Euler course student assistant, Lausanne — Teaching Assistant

September 2024–July 2025

- Class for advanced middle school and high school students introducing proof based mathematics at a young age

Linear algebra Student Assistant, Lausanne — Teaching Assistant

September 2024–December 2024, for Prof. Scherer

Mentor at EPFL for first semester students, Lausanne

September 2024–December 2024

- Weekly meeting with a group of first semester students to guide them through their studies

Internship in the topology and neuroscience laboratory at EPFL as part of Summer In the Lab

July 2024–August 2024

- Research on model structures on the category of crossed modules and Bousfield Localizations thereof
- Attended the Young Topologist Meeting in Münster from August 5 to 9
- Attended an infinity category theory reading group

Group Theory Student Assistant, Lausanne — Design of the MOOC

February 2023–June 2023, for Prof. Hess

- Design of a Massive Open Online Course (MOOC) based on the group theory course of Prof. Hess. In particular writing quizzes for the course

Discrete Mathematics Student Assistant, Lausanne — Teaching Assistant

February 2023–June 2023 & February 2025–June 2025, for Prof. Viazovska

Advanced Analysis Student Assistant 1, Lausanne — Teaching Assistant
September 2022–December 2022, for Prof. Monod