

# Jonáš Dujava



## ■ Info, Links

Email: [jonas.dujava@gmail.com](mailto:jonas.dujava@gmail.com)

Birth: 2000 in Prešov, Slovakia

GitHub: [jdujava](#)

INSPIRE: [J.Dujava.1](#)

## ■ Prizes, Awards

The Highest Achievements:

**EuPhO** — [Latvia 2019](#)

● Absolute Winner ★ [\[Results\]](#)

**IPhO** — [Israel 2019](#)

● Silver Medal [\[top 25%\]](#)

### Flawless Study Record

Obtained scholarships during both of the Bachelor's and Master's studies.

Other Achievements:

Top positions in various competitions (Physics, Mathematics, Informatics).

### Slovak Youth Chess

**Championship** — [Slovakia 2015](#)

● Bronze Medal [\[Category U16\]](#)

## ■ Other Interests

### Linux, Free Software

Optimizing my workflow by creating small handy scripts and customizing minimalistic software.

### Tinkering with $\LaTeX$

Creation of the [T<sub>E</sub>Xtured Template](#).

### Volunteering

Organization of high-school physics and mathematics events.

## ■ Research Interests

While I am rather mathematically inclined — finding clear mathematical formulations helps me to reason about the structure of the theory and its implications — I greatly enjoy developing the physical intuition, and thinking about “the Big Picture” of fundamental physics.

My main research interests (with some experience) are:

### Foundations of Quantum Field Theory

Both fundamental and mathematical aspects of Quantum Field Theory. Symmetries and application of Group Theory in QFT. Interest in the Functorial Approach to axiomatization of QFT, viewed as a formalization of the Path Integral intuition.

### Holography and AdS/CFT Correspondence

Understanding strongly coupled QFT in Anti-de Sitter spacetime through large  $N$  expansion and Conformal Field Theory methods (Holography).

## ■ Education

### 2019 to 2022 — B.Sc. in Physics

[Charles University](#) | Prague | Faculty of Mathematics and Physics

Overall study average: 1.00 (lower is better, best is 1.00)

Total ECTS credits: 219 (from which 16 are acknowledged in Master's)

[Transcript of Completed Study Requirements](#)

### Bachelor Thesis

Title: *Counting operators in Effective Field Theories*

Awarded: Honorable Mention (Dean's Award)

Introduction to group-theoretic techniques used in computing the number of independent operators in Effective Field Theories.

Digital Repository: [original text and reviews](#)

GitHub: [jdujava/CountingInEFT](#)

arXiv: [2211.05759](#) [\[hep-th\]](#) [← see the latest revision here](#)

### 2022 to Present — studying M.Sc. in Theoretical Physics

[Charles University](#) | Prague | Institute of Theoretical Physics

Current study average: 1.00 (lower is better, best is 1.00)

Current ECTS credits: 127 (16 are acknowledged from Bachelor's)

[Transcript of Currently Completed Study Requirements](#)

### Master Thesis

Title: *Strongly Coupled QFT in Anti-de Sitter Spacetime*

*Currently Work In Progress (expected completion in 2025).*

*Can provide a draft upon request.*

Extending results on the (non-singlet) spectrum of the  $O(N)$  model at finite coupling in AdS spacetime. Involves careful development of essential methods and concepts, such as more advanced topics in QFT formalism, large  $N$  expansion, Conformal Field Theory, QFT in AdS, and AdS/CFT correspondence.

## ■ Talks, Seminars

### May 16<sup>th</sup> 2023 — Basel, Switzerland

Title: *Counting operators in EFT by the Hilbert series method*

Invited by: Prof. Dr. Admir Greljo

Presentation: [CountingInEFT\\_presentation.pdf](#)