

Oisín Davey

oisindavey02@gmail.com | (+353) 087 390 8166 | [LinkedIn](#) | [Blog](#)

Programming Awards

Represented Team Ireland for three consecutive years in the **International Olympiad of Informatics**, winning a **bronze medal** in 2021 in Singapore, thereby earning scholarships for the universities of Waterloo and Singapore. Placed **1st in the All-Ireland Collegiate Programming contest** in 2023. Won the (Irish) UKIEPC and the All-Ireland Programming Olympiad.

Skills

- **Programming language acquisition:** Comfortable and practiced adapting to languages to suit the needs of a project; incorporated **C, C++, Python, Go, Typescript, C#,** and **CSS** in major projects; used **Java, HTML** and **Haskell** recreationally.
- **Tutoring:** Seasoned at teaching small groups/individuals in mathematics, having been involved in leaving cert tutelage and having been **contracted by UCC** twice to train our international **Programming Olympiad** team. Employed by Maynooth University as an **academic tutor** for 1st science, where I also **volunteer** to train the national **Maths Olympiad** advanced class. As a leaving cert tutor with Educandi, I **managed a team of 6** for a material creation project, totaling over 500 pages of high-quality notes.
- **Pattern spotting:** Most satisfied when **uncovering hidden structures in a task/problem**: exploitation thereof enables **optimisation and novel perspectives**, applicable to nearly all types of analytical problem solving.

Education

Maynooth University | Kildare, Ireland
BSc **Theoretical Physics & Pure Mathematics**

- **93.7%** GPA in 3rd year, **93.0%** GPA in 2nd year, **91.4%** GPA in 1st year.
- Awarded all 7 academic prizes available in physics & maths. E.g., **The Hamilton Prize for the top 9 undergraduate students of mathematics in Ireland.**
- **Founder** of the PhysChem society, and Problem Setter for the Computer Science society.

Experience

Software Development Intern | CERN - Geneva | June 2024 – September 2024

- Developed proprietary graphical tool "**Vis-à-Gis**" using the geodesy api **PyQGIS** and **Qt** to aid the beam surveyors in analysing the results of "Logiciel Général de Compensation", detailing the measurement network precision data from surveys of the Large Hadron Collider.
- Created, for **Vis-à-Gis**, a novel computational method for displaying projections of confidence ellipsoids using spectral approaches.
- Studied theoretical physics, specifically **quantum field theory**, within a summer programme delivered by the world's foremost lecturers on QFT, optics, cosmology and phenomenology.
- Learned **French**, the operative language of the section for internal documentation.

Research Fellow | Tyndall - Cork | June 2023 – September 2023

- Produced original **C++/Python model** of the spectra of quantum-confined stark effect based electro-absorption modulators, based on Elliott theory.
- Using time **complexity analysis**, I optimised the efficiency (From cubic to log-linear) of the program using a krylov-subspace eigenvector algorithm, now computing 4.8 wavefunctions per second, each with 100,001 nodes.
- Rephrased a component of the model as a discrete convolution, enabling further improvement in speed using fast fourier transforms.