

Xandru Mifsud

Curriculum Vitae

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📄 [xmif1.github.io](https://github.com/xmif1)

Education

- 2018–2022 **B.Sc. (Hons) in Mathematics & Computer Science**, *University of Malta*, Majoring in mathematics, predicted first class honours with a 91% grade average.
- 2014–2016 **MATSEC Matriculation Certificate**, *St. Aloysious' College Sixth Form*, ADVANCED: Pure Mathematics (A), Computing (A). INTERMEDIATE: Physics (A), Philosophy (A), English (B), Systems of Knowledge (B).
- 2009–2014 **Secondary Education**, *St. Augustine College*, 7 MATSEC O Levels and 4 IGCSEs with grades A–B.

Research Interests

- **Spectral and Algebraic Graph Theory**
Vertex valuations, partitioning of the vertex set into equivalence classes.
- **Hamiltonian Paths and their Existence**
Vertex transitivity, relations with Computer Science *eg.* 3–SAT and TSP.

Research and Academic Experience

- 2021 **CERN Summer Intern**, ROOT Project.
- 2021–2023 **Student Representative on Faculty of Science Board**, University of Malta.
- 2018–2019 **Research Support Assistant**, Department of Mathematics, University of Malta, under the supervision of Prof. Irene Sciriha.
- RESEARCH AREAS: Graph Spectra, Networks and Electrical Conductivity in Nano–Structures.

Professional Experience

- 2019–2020 **Software Developer**, *IO Labs*.
- Various applications of machine learning techniques, for embedded systems. In collaboration with Prof. Kristian Zarb Adami and Dr. Alessio Magro.
- 2018–2019 **Intern Statistician**, *National Statistics Office, Malta*.
- Within the Methodology and Quality Unit.
- 2017–2018 **Software Developer**, *Ascent Software*.
- Working on the Square Kilometre Array project with the University of Oxford and the Institute of Space Science and Astronomy (University of Malta); implementing ETL flows using SAP Data Services and PL-SQL.

Publications

- Mifsud X., "λ–Core distance partitions", *Linear Algebra Appl.* (2021), <https://doi.org/10.1016/j.laa.2020.12.012>
- Sciriha I., Mifsud X., Borg J., "Nullspace vertex partition in graphs", *J. Comb. Optim.* (2020), <https://doi.org/10.1007/s10878-020-00624-x>

Honors & Awards

- Faculty of Science Dean's Award for Academic Excellence, 2018.

Talks and Presentations

- 2019 **Combinatorics and Graph Theory Seminar**, *University of Malta*.
- TITLE: Nullity Relations on Graphs with Independent Core Vertices.

Skills

Programming Languages.

- Python, Java, C, C++, Haskell, Mathematica, \LaTeX
- GitHub: <https://github.com/xmif1/>

Operating Systems.

- Linux (Ubuntu), mac OS