

# Sarah-Sonia Balan

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📍 Manchester    🌐 [Sonia Balan](#)



## EDUCATION

**MMath Mathematics** University of Manchester *09.2023 - 06.2027*

- Achieved a cumulative average of 82%
- Currently undertaking a project on "Noetherianity of twisted-polynomial rings" under the supervision of Dr. Omar León Sánchez.
- Particular interests in Algebra (especially non-commutative algebra) and Mathematics Education.
- Awarded 3rd place in University of Manchester Volunteering Award for contributions that benefit the mathematical student community.

**High School** "Mircea Cel Batran" National College *09.2019 - 06.2023*

- Average: 10/10
- Was one of the 4 people in my year to finish with perfect marks, having also gotten a scholarship in the 10th grade thanks to results in Mathematics and Chemistry olympiads.

## WORK EXPERIENCE

**Mathematics Student Representative Coordinator** University of Manchester *01.2025 - present*

- Gathered feedback from my cohort and other student reps, whilst making the student rep system visible.
- Influenced all student focus groups and Student Voice committees with staff.
- Closed the feedback loop by working closely with my Coordinator colleague on a student rep newsletter.

**mA\*ths Online Tutor** University of Manchester *01.2025 - 03.2025*

- Guided and improved Sixth-form students' confidence in upcoming A-Levels.
- Involves delivering three 2 hour virtual tutoring sessions biweekly.

**Library Student Team Member** University of Manchester *09.2024 - present*

*Equality, Diversity and Inclusion, Inclusive Teaching*

- As Training and Development Area Lead, supported peers in achieving HEA accreditation.
- Represented the student body in PAL workshops and the ITL conference, focusing on feedback, inclusive curriculum design, and neurodiversity.
- Assisted in facilitating the "Presentation Skills: Delivering with Confidence" workshop.
- Reviewed and quality-assured university teaching resources and online materials.

**Mathematics Tutor** Levelling Up in Maths *04.2024 - 03.2025*

- Coached fortnightly online classes for a group of 5 students from underrepresented background, deepening understanding of A-Level maths, and building confidence in the transition to University.

## Programming Skills

LaTeX

C++

SQL

Python

JavaScript

MATLAB

R

Languages

Romanian (Native tongue)

English (C2 Proficiency)

German (B1 Proficiency)

Polish (A1 Proficiency)

## VOLUNTEERING EXPERIENCE

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- Peer-Assisted Study Sessions Coordinator** University of Manchester 09.2025 - present
- Designing PASS materials according to scholarly-informed pedagogical techniques.
  - Trained a team of Peer-Assisted Study Session Leaders to support first-year mathematics students.
  - Leading weekly debriefs, providing guidance and feedback on facilitation and pedagogy.
- Peer-Assisted Study Sessions Leader** University of Manchester 09.2024-06.2025
- PASS involves facilitating the university experience of a group of ten first year students, answering math questions as well as general advice.
  - Engaged in weekly debriefs to plan the session of the following week, together with PASS Staff and Student Coordinators.
- Team Guide** International Maths Olympiad 07.2024-07.2024
- Had to be the main point of contact of the team with the rest of the staff.
  - Answered any questions either about maths as well as about university life.
  - Met great speakers and mathematicians such as Terrence Tao, Grant Sanderson, Simon Singh, Daniel Tammet.
- Student Development Secretary** MathSoc Manchester 10.2023 - present
- Together with colleagues, developed Manchester Maths League(MML), a mathematics competition, which gathered more than 70 participants from 5 Universities.
  - Researched and created 2 infographs celebrating minority mathematicians.
- Teaching Assistant** English-Speaking Union Romania 02.2021 - 08.2023
- Invigilated numerous exams, from Cambridge Assessment English exams to paper-based and virtual SAT.
  - As part of a team of volunteers at the ESU Summer Camp, trained 12-14 year old children in Public Speaking and Debate competitions in English.

## CERTIFICATES

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- Fellowship of the Higher Education Academy (FHEA) – Pending** 01.2026
- Communication Access CAUK Licence** 10.2024
- MathWorks Simulink OnRamp MATLAB certification** 01.2024
- STEP II-S, STEP III,1** 09.2023
- University of Manchester Volunteering Award – 3rd Place, Student undertaking work benefitting other students** 05.2025

## PUBLICATIONS

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- The big journey to Fermat's little theorem, *The Mancunian*** 12.2024
- The summer I became a mathematician: reflections on the LMS Summer School and my project*, London Mathematical Society Newsletter (forthcoming, December 2025)** 12.2025

## PROJECTS

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- "Facilitating Effective Learning in Abstract Algebra: A Study of Teaching Practices and Proof Comprehension", supervised by prof. Louise Walker, London Maths Society Undergraduate Research Bursary** 06.2025-08.2025
- Participant, London Mathematical Society Undergraduate Summer School, University of Bath** 07.2025