Magdalena I. Sammut

msammut@arizona.edu | LinkedIn Magdalena Sammut

Education

Aug 2023 - present **University of Arizona** GPA: 3.78/4.00

Bachelor of Science in Astronomy with a minor in physics

- Relevant Coursework: Astronomy I, Mechanics, Optics and Thermodynamics, Electricity and Magnetism, Quantum Mechanics I, Theoretical Mechanics, Math Techniques in Physics, Vector and Multivariable Calculus, Differential Equations, Computer Programming I

Bachelor of Arts in Arabic

- Member of the Arabic Language Flagship Program
- Intermediate proficiency

Research Experience

July 2025 - present **Undergraduate Research Assistant** University of Arizona
Mentors: Christa DeCoursey & Dr. Eiichi Egami Tucson, AZ

- Examining JWST data for high-redshift transients with SAOImage DS9 and code pipelines

May 2025- Aug 2025 **Schaibley Lab Intern** University of Arizona
Mentor: Mark Coopershylak Tucson, AZ

- Exfoliated graphene and hexagonal boron nitride (hBN) using the scotch tape method
- Searched for mono- and bi- layer graphene, graphite backgate candidates, and hBN flakes
- Probed samples' surface-quality using atomic force microscopy
- Constructed a three layer heterostructure for chiral induced spin selectivity research
- Evaporated gold onto device for its contacts
- Scheduled to deliver a presentation about my work to UA students and faculty on September 3rd, 2025

Aug 2024 - present **Undergraduate Research Assistant** University of Arizona
Mentor: Dr. Tim Eifler Tucson, AZ

- Forecasting the science of performance of the Roman Space Telescope (launch 2026) to optimize cosmological analysis, and constraints on dark energy
- Using the CoCoA (Cobaya CosmoLike Architecture) software framework to run simulated MCMC analyses on UA High Performance Computers
  - CoCoA is a combined C and Python software framework that models cosmological observables and uses Bayesian Inference to calculate constraints on cosmological parameters
- Presented a poster about my research to astronomers, faculty, and colleagues at the 2025 TIMESTEP Research Apprenticeship Symposium

Jul 2022 - Aug 2022 | **National Synchrotron Light Source - II Intern** | Brookhaven National Laboratory
Mentor: Dr. Dean Hidas | Upton, NY

- Used Python in Jupyter Notebooks to fit linear, exponential, and power law curves to synchrotron data with Matplotlib, reducing pre-experimentation calculation time.
- Utilized a chi square calculation to verify fit quality
- Determined the maximum brightness that can be produced for given synchrotron parameters
- Presented the results of this research to researchers and general public
- Wrote a paper on the results, and was selected as a semifinalist to present to the Junior Humanities and Science Symposium at CUNY York College (January 2023)

Skills

Aug 2024 - May 2025 | **TIMESTEP Research Apprenticeship Program** | University of Arizona
Tucson, AZ

- Selected as one of thirteen students for a paid research position during the 2024-2025 academic year
- Participated in extensive hand-on workshops encompassing scientific paper review, keeping research notes, Linux, GitHub, high-performance computing, Astropy, NumPy, secure shell (ssh), Raspberry pi, and curve fitting astronomical data

Teaching Experience

July 2025 - Present | **Teacher** | Islamic Center of Tucson
Islamic Center of Tucson (ICT) Al-Bayan Program | Tucson, AZ

- Teaching Arabic alphabet to children aged between three and seven for thirty minutes every Friday through lecture and activities

July 2024; July 2025 | **Teacher's Assistant** | Islamic Center of Tucson
ICT Summer Program | Tucson, AZ

- Collaborated with colleagues to develop Islamic Studies and Qur'an curricula for each age group
- Organized activities for students
- Oversaw communication between women's classes and ICT administration

Oct 2024 - May 2025 | **Math Tutor** | Islamic Center of Tucson
ICT Tutoring Program | Tucson, AZ

- Mentored one to two students between kindergarten and twelfth grade in mathematics for one hour every Sunday

Aug 2024 - May 2025 **Teacher's Assistant** — Islamic Center of Tucson
ICT Weekend School — Tucson, AZ

- Taught Islamic Studies and Arabic to approximately 25 children aged between nine and ten for four hours every Sunday
- Prepared lesson plans and cultivate an engaging environment of mutual respect

Projects

Nov 2024 **The Shared Evolutionary History of Uranus and Neptune** — Grade: 100%

- Wrote a research paper arguing Uranus and Neptune share a similar evolutionary history, following a Nice model in which Uranus formed exterior to Neptune
- Reviewed more than a dozen academic papers to support my argument

May 2024 **The Language Attitudes of a Saudi Arabian Woman towards Standard and Regional Arabic** — Grade: 100%

- Interviewed a woman from Saudi Arabia to research how she feels about her regional dialect of Arabic versus standardized Arabic
- Compared her answers to past linguistic research to examine correlations and differences in language attitudes from different time periods and regions.
- Studied previous literature to determine trends in language attitudes

Awards and Scholarships

Aug 2023 - present **Arabic Language Flagship** — University of Arizona
$11,000 to study abroad

- Awarded government funding to develop my Arabic proficiency and further my Arabic degree in Morocco

Apr 2023 - present **Arizona Excellence Tuition Scholarship**
$20,000 per year, 4 years

- Awarded to incoming freshmen who completed high school with a GPA of 3.75-3.89 and maintain a GPA of at least 3.0

May 2024 - present **Dean's List** — University of Arizona

- Awarded to students with a GPA of 3.50-3.99 at the end of the semester

May 2024 - present **Academic Distinction: 2023 - 2024** University of Arizona

- Awarded to students with a GPA of 3.500 - 3.999 at the close of the academic year

Dec 2023 - May 2024 **Dean’s List with Distinction** University of Arizona

- Awarded to students with a 4.0 GPA at the end of the semester