ANA E. URIBE

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EDUCATION

University of Minnesota (UMN) September 2024 - Expected 2029
PhD Computer Science (CS)

UMN September 2022 - June 2024
MS Computer Science (CS)

Western Washington University (WWU) September 2016 - June 2020
BS Mathematics

SKILLS

Programming Proficient in Python, R and SQL, experience with Java, C
Other Bilingual in English and Spanish

PUBLICATIONS

Areeg Mostafa, Mohamed Mokbel, Ana Elena Uribe. *On Splitting Raw Trajectories.* SIGSPATIAL (2024)

RESEARCH EXPERIENCE

College of Science and Engineering (CSE) Fellow September 2024 - Present
Prof. Mohamed Mokbel

- Creating a pipeline to manage and query spatial data for climate scientists.
- Processing and aggregating massive spatial data.
- Project code can be found at: `https://github.com/iharp3/iharp-customized-storage`

CS MS Plan B Project November 2023 - June 2024
Prof. Mohamed Mokbel

- Developed methods to calculate road and intersection information from GPS trajectories that pass through them. Primarily coding in Python.
- Results complement and are intended to populate or correct publicly available Open Source Map Metadata.
- Conduct experiments to evaluate the accuracy of GPS trajectory segmentation using the Google Maps Direction Matrix.

UMN Research Assistant May 2023 - May 2024
Prof. Lucy Fortson

- Served as the team lead for the development of the Elephant ID project on the citizen-science web portal Zooniverse aimed at creating a dataset to re-identify elephants for conservation and management decisions.
- Designed all instructional materials and data collection tasks for the project, and served as the primary moderator for users.
- Extensive image data processing in Unix utilizing the Minnesota Supercomputing Institute. Used a mix of Bash and Python. Used Python to process and aggregate user generated data for images from Zooniverse.
- The project can be found at: `https://www.zooniverse.org/projects/aeuk/elephant-id`
- Worked 20 hours per week during the span of the RA.

Nuclear Multimessenger Astronomy (NMMA) Pipeline Student Researcher May 2023 - January 2024
Prof. Michael Coughlin, Prof. Jie Ding

- Design and implement a multi-arm bandit algorithm for the NMMA pipeline to decide which astrophysical object to observe.
- Assisted in the testing and development of this method primarily using simulated astrophysical data.
- Developing algorithm in Python. Extensive use of Git/Github for software management.
- NMMA:`https://nuclear-multimessenger-astronomy.github.io/nmma/index.html`

UMN NSF Research Trainee September 2022 - May 2024

- Recipient of NSF research trainee fellowship in Data Science in Multi-Messenger Astrophysics (DSMMA).
- Attended a variety of professional and technical training events. Some topics included: data mining and using CNNs in PyTorch, data visualization in R, dealing with impostor syndrome in graduate school, and giving better academic presentations.
- Collaborated with data science and astrophysics students and faculty for the year-long NMMA Pipeline student research project listed above.
- Completed 12 hours of outreach for the program (see Volunteer Experience).
- DSMMA:`https://sites.google.com/umn.edu/data-science-in-multi-messenge/home?authuser=0`

TEACHING EXPERIENCE (IN ORDER OF RELEVANCE)

Math Fellow - WWU Math Center September 2017 - June 2020

- Worked as a mathematics tutor for undergraduate students in calculus, linear algebra, differential equations, probability, statistics, and basic proof writing.
- Provided support for a variety of problems including student work from computer science, engineering, economics, and physics courses.
- Led development and set-up of online Math Center and tutored online due to COVID-19.
- Fostered an inclusive environment in order to encourage students of various backgrounds to pursue programs heavy in mathematics.
- Worked on average 10 hours per week for three years.

Bilingual Educational Assistant - Garfield Elementary School September 2020 - March 2022

- Assisted in a dual-immersion fourth grade classroom, focusing on leading small math groups of 2-5 students.
- Designed lessons and led classes of around 25 students where necessary.
- Planned and led the math Independent Education Plan one-on-one time for fourth grade students.
- Worked 20 hours per week.

Combinatorics Instructor - WWU Migrant Youth Leadership Conference October 2020

- Co-planned and led a short workshop for attending high-school students that fostered interest in mathematics and introduced combinatorics through an accessible, inclusive, and motivating lesson.

Ballet Instructor - Northwest Ballet Academy September 2016 - May 2019

- Planned and taught ballet classes to students ranging from 5 to 17 years old. Classes had up to 20 participants.
- Led rehearsals for productions such as The Nutcracker and Swan Lake. This involved writing and teaching choreography to 15 dancers over several weeks.

- Worked on average 10 hours per week.

PRESENTATIONS

DSMMA Cohort 2022 Capstone Update November 2023
"Optimizing Follow-Up Observations of Kilonova"

Student Poster Presentation Competition - Joint Mathematics Meeting (JMM) January 2021
"Interpreting the Relationship Between Non-Overlapping Confidence Intervals and FWER in One-Way Layout"

Statistics Project Presenter - WWU Scholar's Week May 2020
"Confidence Interval-Based Rejection Rule for All-Pairwise Comparison of Means"

Poster Presenter - NUMS/Π-MUC Joint Conference April 2020
"Confidence Interval-Based Rejection Rule for All-Pairwise Comparison of Means"

AWARDS

CSE Inclusion Fellowship ($27,600 plus tuition)	2024
CSIDEA Fellowship ($1,500)	2024
DSMMA National Science Foundation Research Trainee Award Recipient ($35,000)	2022
Honorable Mention, JMM 2021 Student Poster Competition	2021
WWU College of Science and Engineering Presidential Scholar	2020
WWU Computer Science and Mathematics Scholar	2016 - 2020
Career Prep for CS/Math Scholarship ($4,500 yearly)	2016, 2018, 2019

PAST EMPLOYMENT AND VOLUNTEER EXPERIENCE

CS Preliminary Exam Policy Committee October 2024 - Present

- Volunteer to help the CS Graduate Student Association draft a proposal to improve the Preliminary written and oral exam process.
- Interview students from different labs and PhD status to get student perspectives and input.

DSMMA Cohort Representative September 2022 - January 2024

- Serve as the liaison between the students and program administration and directors.
- Attend National Science Foundation National Research Training meetings to advocate for DSMMA participants, provide ideas to improve the program, and give feedback on cohort well-being.

STEM Activity Facilitator Volunteer - Northside STEM June 2022

- Engaged students grades 3 - 5 in STEM-related hands-on activities.
- Managed one table with 4-6 students for the day, interacting with families and answering student questions.
- This volunteer experience counted for the DSMMA outreach hours.

Family Liaison - Garfield Elementary School September 2021 - March 2022

- Helped Spanish-speaking families connect with school and district resources.
- Performed and streamlined administrative tasks including answering the phones, planning student transportation, communicating with families, registering students for school, processing student absences, injuries, and COVID-related screening procedures.
- Developed the standard operating procedure for the position and created resources including phone scripts, bus and class attendance sheets, and compiled scholarships, grants, subsidized housing and other resource information for students and families.
- Worked with around 100 families to help with specific resources such as: job, housing, and child-care applications; winter clothing; and food bank assistance.

- Worked 20 hours per week.

Student Ambassador - WWU College of Science and Engineering (CSE) November 2019 - June 2020

- Worked with Student Senators and other Ambassadors to plan and host in-person community gatherings for students where we provided food, disseminated information about available resources in the CSE, and facilitated discussions on diversity and inclusion within the college.
- Worked with the Dean of the CSE and faculty to develop ways for professors and administration to address feedback from students.

Coordinator - Agape Service Project June 2018 - August 2018
Assistant Coordinator - Agape Service Project June 2017 - August 2017

- Developed and implemented a non-profit summer service experience for middle to high school youth to serve local migrant farm workers and learn about social justice.
- Planned meals, transportation, and activities for a new group of around 40 youth and 15 adults each week.
- Collaborated with local food banks, grocery stores, and farms to organize a weekly food bank for migrant farm workers that served around 100 families in-person and delivered around 50 boxes of food to families without transportation.
- Provided food, games and activities each week for the children living at a migrant camp.
- Communicated with the Spanish-speaking farm workers to build community and determine needed support.
- Learned about and advocated for migrant farm worker rights. Sent letters to county and state representatives.
- Worked around 70 hours per week.