Aysha **Rahman**

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Education

Georgia State University *Atlanta, GA*
M.S.A. IN DATA SCIENCE *December 2025 (Expected)*
- Concentration in Big Data and Machine Learning

Clark Atlanta University *Atlanta, GA*
M.S. IN PHYSICS *May 2024*
- Activities and Societies: AUC Data Science Club (Treasurer and Social Media Chair)

Agnes Scott College *Decatur, GA*
B.S. IN ASTROPHYSICS, MINOR IN MATHEMATICS *May 2019*
- Activities and Societies: Commuter Student Organization (Treasurer), Society of Physics Students, Muslim Student Association

Skills

Programming Python, R, C, Java, HTML, CSS

Software Ovito Open Visualization Tool, Large-scale Atomic/Molecular Massively Parallel Simulator (LAMMPS), Eclipse, Jupyter Notebook, VirtualBox, Git, G Suite, Microsoft Excel, Microsoft Word, Microsoft PowerPoint

Projects

Accelerating Atomistic Modeling of Proton Conducting Oxides with Machine Learning *Pittsburgh, PA (Remote)*
MICKEY LELAND ENERGY FELLOWSHIP (MLEF) - NATIONAL ENERGY TECHNOLOGY LABORATORY (NETL) *May 2023 - August 2023*
- Worked with Dr. Wissam Saidi and Dr. Yueh-Lin Lee on computational materials science research at NETL as part of the MLEF sponsored by the U.S. Department of Energy's Office of Fossil Energy and Carbon Management.
- Used the LAMMPS software and the DeepMD-kit Python package to study structural properties of proton-conducting oxide barium zirconate ($BaZrO_3$) for hydrogen electrochemical cell applications.
- Used a combination of Ovito and Python to generate and visualize various yttrium-doped barium zirconate structure files.
- Utilized Python for data analysis.

Big Data Mining for Waste Plastic Upcycling *Pittsburgh, PA (Remote)*
MICKEY LELAND ENERGY FELLOWSHIP (MLEF) - NATIONAL ENERGY TECHNOLOGY LABORATORY (NETL) *June 2022 - August 2022*
- Worked with Dr. Fan Shi at NETL as part of the MLEF sponsored by U.S. Department of Energy's Office of Fossil Energy and Carbon Management.
- Created large XML databases of published research for use in study of plastic waste upcycling.
- Developed a data mining tool using natural language processing in Python to perform bibliometric analysis on plastic upcycling technologies.
- Created a user interface for data mining code using Tkinter and packaged program into a single executable desktop application for bibliometric analysis across various fields.

Observations of the 18 cm OH Lines of 23 Comets *Decatur, GA*
AGNES SCOTT COLLEGE *Sep 2017 - Dec 2017*
- Conducted research under Dr. Amy Lovell. Used OH spectral lines of comet observations from the Green Bank Telescope and the Arecibo Observatory to map and model gas outflow rates and comet velocities using Linux virtual machines and software such as Octave and gnuplot.
- Presented poster at Georgia Regional Astronomy Meeting (GRAM).

Experience

Scholars Education *Atlanta, GA*
MATH AND SCIENCE TUTOR *Sep 2020 - Oct 2024*
- Tutored middle and high school students in all levels of mathematics, from elementary math to AP Calculus, and algebra-based physics, resulting in letter grade increases for students.
- Expanded responsibilities to assist center director by handling phone calls, monetary transactions with parents, and day-to-day operating tasks.
- Managed responsibilities of director during director's extended leave of absence, including scheduling, communication with clients, and billing.

Clark Atlanta University *Atlanta, GA*
LABORATORY TEACHING ASSISTANT *Aug 2021 - May 2023*
- Taught and set up laboratory experiments for Physics II (Electricity and Magnetism) labs.
- Assisted laboratory instructor in managing and teaching online lab sessions as a result of COVID-19 pandemic protocols.
- Graded lab reports, received and responded to student communications, and supervised student use of lab equipment.

Research Centers in Minority Institutions

GRADUATE TEACHING ASSISTANT

Atlanta, GA

November 2022 - May 2023

- Received training in teaching R using the Software Carpentry curriculum for the R for Data Science course.
- Worked as a graduate teaching assistant for the RCMI R for Data Science course.
- Facilitated in-class discussions, provided online resources, and assisted in teaching graduate students R skills for data science using the tidyverse and ggplot2 packages.

Atlanta University Center Data Science Initiative

GRADUATE TEACHING ASSISTANT

Atlanta, GA

August 2022 - December 2022

- Served as teaching assistant for the AI4ALL Discover AI course at the Atlanta University Center.
- Taught introductory Python to undergraduate students.
- Lead and graded labs on cleaning and filtering data, supervised vs unsupervised machine learning, k-means clustering, and other machine learning techniques.

Research Centers in Minority Institutions

GRADUATE STUDENT ASSISTANT

Atlanta, GA

August 2022 - May 2023

- Worked as a graduate assistant for the RCMI Training for Data Science in Health Disparities and R for Data Science courses.
- Facilitated discussions, provided resources, and held office hours on Discord for a class of 30+ students ranging from graduate students to professors.

Agnes Scott College

ELECTRONICS LAB TECHNICIAN

Decatur, GA

Sep 2019 - Apr 2020

- Tested, repaired, and organized circuit components.
- Repaired, created documentation for, and optimized 3D printer for school-wide use.
- Designed and delivered a 3D printing workshop for students and professors.
- Trained and supervised student and faculty use of previously underutilized 3D printer for personal and professional use.

Energy Consulting Group

INTERN

Atlanta, GA

Sep 2018 - Feb 2019

- Compiled data and created presentations for various internal and client needs regarding IT systems and data center locations using Microsoft PowerPoint, Microsoft Excel, and public databases.
- Enabled company to save hundreds of dollars when switching IT systems through communication with providers and presenting organized spreadsheets and slides to company CEO.
- Researched and created reports on energy storage technologies, including lithium-ion batteries and molten salt.