# Tazkera Haque

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## PROFILE

I'm actively seeking a role in Data Science and Machine Learning at industry-leading companies that truly value the fusion of technology and human ingenuity. My in-depth knowledge in Data Analysis and Machine Learning, backed by a Master's in Computational Astrophysics, positions me as an ideal fit for such innovative environments.
• Professional Summary:

• Advanced Data Analysis: Conducted comprehensive exploratory data analyses using Python, Matplotlib, and Seaborn. A remarkable feat in this regard was my deep-dive into diabetes datasets, extracting invaluable insights.

• Mastery in Predictive Modeling: Demonstrated expertise in building and refining predictive models using a range of techniques from Logistic Regression and Support Vector Machines to Random Forests and sophisticated Deep Learning Models.

 • Pioneering Education: Crafted and spearheaded an age-adaptive coding curriculum focusing on experiential learning. This initiative significantly elevated students' analytical abilities and fostered a genuine love for continuous exploration.

 • Technical & Transferable Skills:

Technical: Python, Matplotlib, Seaborn, Scikit-learn, Logistic Regression, Support Vector Machines, Decision Trees, Random Forests, Deep Learning, AI.

Transferable: Curriculum Creation, Effective Stakeholder Communication, Team Collaboration, Thorough Analysis, Commitment to Excellence.

## WORK EXPERIENCE

**Medical Data Scientist**
**North America Medtech Group**
01/2023 – present
Data Analysis & Machine Learning Experience:

• Conducted exploratory data analysis using Python's Matplotlib and Seaborn, gaining deep insights into diabetes datasets.

• Identified key patterns, correlations, and potential predictive features within the data.

 • Communicated complex data trends and distributions effectively to stakeholders through visual representations.

 • Leveraged Scikit-learn for feature selection to identify crucial variables for predictive modeling.

 • Built predictive models using:
 Logistic Regression
 Support Vector Machines
 Decision Trees
 Random Forests

## WORK EXPERIENCE

Deep Learning Models

• Continuously experimented with model architectures and hyperparameters to optimize accuracy and robustness.

**Lead Instructor mentor**
**Coding With Kids**
12/2020 – 08/2023    UNITED STATES

**Instructor**
**Coding With Kids**
09/2020 – 08/2023    UNITED STATES
• Developed and implemented age-appropriate coding curriculum and lesson plans to engage students in hands-on coding activities, projects, and challenges.

 • Conducted regular assessments to evaluate students' progress, identifying areas for improvement and tailoring instruction accordingly.

• Assisted students in troubleshooting coding errors and debugging their programs, promoting critical thinking and analytical skills.

• Created and curated coding resources, including tutorials, exercises, and online learning materials, to support students' independent learning.

 • Collaborated with other instructors and educators to share best practices, exchange teaching ideas, and develop innovative coding curriculum.

**Graduate Teaching Assistant**
**The University of Texas at Arlington**
09/2019 – 09/2020
• Facilitated laboratory sessions for calculus-based Electromagnetism Theories, guiding students in conducting experiments, explaining experimental procedures, and ensuring their safety and adherence to lab protocols.

• Graded assignments, quizzes, and exams, providing constructive feedback to help students improve their understanding and performance.

 • Led review sessions before exams, summarizing key concepts, solving practice problems, and assisting students in exam preparation.

• Collaborated with the course instructor and other teaching assistants to discuss curriculum development, instructional strategies, and assessment methods.

**Graduate Research Assistant**
**University of Massachusetts Amherst**
09/2017 – 05/2019
• Explored the thermal Sunyaev-Zel'dovich (tSZ) effect and its relation to energy in media surrounding massive galaxies.

 • Contributed to a project aimed at understanding:

 • Structure formation
 • Galaxy population feedback history
 • Resolving key questions in modern cosmology
 • Calculated synthetic profiles of the SZ effect in massive    galaxies using numerical simulations. Presented a re-scaled pressure integral along the line of sight as a novel measurement method for the SZ effect.

 • Assessed the potential for integrating our theoretical findings with observational data in the near future.

## WORK EXPERIENCE

### Graduate Teaching Assistant
**University of Massachusetts Dartmouth**
09/2015 – 08/2017
• Conducted regular office hours to provide one-on-one assistance to undergraduate students, addressing their questions and concerns related to course material, homework and lab assignments, and exams.

• Developed and delivered interactive lesson plans, incorporating advanced pedagogical methods and resources to engage students and enhance their understanding of complex physics concepts.

 • Facilitated laboratory sessions, guiding students in conducting basic algebra-based classical mechanics and advanced calculus-based electromagnetism theory lab projects.

## EDUCATION

### Master of Science - MS
**University of Massachusetts Dartmouth**
2015 – 2017
I am experienced with the incorporation and analysis of large-scale multi-physics fluid simulations and high-performance computing in the field of theoretical and computational astrophysics. I have carried out fully three-dimensional numerical simulations of the merger of a Carbon-Oxygen White Dwarf with Oxygen-Neon White Dwarf for the first time to investigate the progenitor channel of type Iax Supernovae. The results of my simulation and significant observations are published in The Astrophysical Journal in 2018.

### Bachelor of Science - BS
2011 – 2015
Conducted an independent research project focused on Astrophysics. Designed and implemented experiments, collected and analyzed data, and drew conclusions based on findings. Presented research findings at university symposium and gained experience in scientific writing and presentation skills.

## SKILLS

Data Science    Machine Learning    Data-driven Decision Making

R (Programming Language)    Presentation Skills    Microsoft Excel

SQL    Tableau    Big Data Analytics    Pivot Tables    Pedagogy

Lesson Planning    Student Leadership    Professional Mentoring

Statistical Data Analysis    Computational Mathematics

Curriculum Development    Technical Presentations    Grading

Educational Leadership    Data Cleaning    Numerical Analysis

Data Visualization    High Performance Computing (HPC)

Critical Thinking    Computer Simulations    Educational Technology

Intelligence Analysis    Coaching    Canva    Confidentiality

Logistical Coordination    Written Communication    Organization Skills

Workload Prioritization    Skilled Multi-tasker    Project Coordination

Documentation    Interpersonal Skills    Communication

Object-Oriented Programming (OOP)    JavaScript

Cascading Style Sheets (CSS)    Project Management    Python    LaTeX
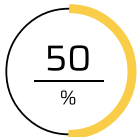
Parallel Computing    Research    c    C++

## LANGUAGES

**100** %
English

**100** %
Bengali

**50** %
Persian

## AWARDS

**Judy Young Fellowship for outstanding incoming PhD students**
09/2017

**Chancellor's Centennial Scholarship Award**
09/2016
Awarded to one outstanding graduate student from each of the University's six Colleges

**Vice Chancellor's Medal for the Highest Distinction in the Department of Mathematics and Natural Sciences**
11/2015

**Team Leader and Bronze Medalist at 5th International Astronomy and Astrophysics Olympiad**
08/2011

**Micheal and Wanda Ray PhD Fellow**
09/2019

# PUBLICATIONS

**Double-degenerate Carbon–Oxygen and Oxygen–Neon White Dwarf Mergers: A New Mechanism for Faint and Rapid Type Ia Supernovae**
**The Astrophysical Journal, Volume 869, Number 2**

The ONe-CO WD merger naturally produces a very faint and rapidly fading transient, fainter even than the faintest Type Iax events observed to date, such as SN 2008 ha and SN 2010ae. More massive ONe primaries than considered here may produce brighter and longer-duration transients.