Dariush Aligholizadeh

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Education

Aug 2020 | **B.S. in Biochemistry & Molecular Biology, B.S. Computer Science**
May 2024 *University of Maryland, Baltimore County, GPA: 4.00/4.00, Member: Honors College*
Baltimore, MD

Sept 2016| **High School Diploma**
May 2020 *Towson High School, GPA: 3.89/4.00, Rank: 14/326 (top 10%), SAT: 1450 (99th percentile)*
Towson, MD

Research Experience

May 2019| **Undergraduate Researcher/Lab Manager, Mentor: Dr. Mary Devadas,**
Present **Towson University**
Inorganic Chemistry and Nanoscience Lab.
- First authoring paper on dendritic silver nanoplate synthesis
- Co-authoring paper on green synthesis of gold nanoplates
- Trained on and worked with UV-Vis, IR, Fluorescence, SEM, NMR

Aug 2019 | **Research Assistant, Mentor: Dr. Piotr Walczak,**
Jul 2020 **University of Maryland, Baltimore & Johns Hopkins School of Medicine.**
Neuroradiology Lab.
- Worked on targeting of HIF1 protein and understanding its role in glioblastoma multiforme
- Worked with ImageJ and other data analysis tools
- Helped build convolutional neural network for cancer cell classification
- Trained on and worked with CryoStat, compact MRI

Oct 2020| **Undergraduate Research Assistant, Mentor: Dr. Govind Rao,**
Present **University of Maryland, Baltimore-County**
Center for Advanced Sensor Technology Lab (CAST).
- Researching ELISA technique for cheaper and more accurate antigen/biomarker detection
- Still in training due to COVID restrictions

May 2020| **Undergraduate Researcher Assistant, Mentor: Dr. Rhoel Dinglasan, Remote/Online**
Present *Infectious Diseases Lab*
- Independently develop software and programs for specific lab
- Developed database for quick Human ortholog lookup
- Created chromatography graphing program based on photo input

Scientific Presentations/Outreach

Towson University Science Outreach, *Jan 2020*
- Conducted outreach hosting the local High School in our research lab and showing them our day-to-day tasks
- Demonstrated a chemical synthesis of Gold Nanoparticles and taught about the synthesis mechanism
- Helped interested teenagers see the applications of chemistry and become interested in research

UMBC Undergraduate Research Symposium, *Oct 2019*
- Presented on Nanoscience research done with the Towson University Nanoscience Lab

Towson Undergraduate Research Conference, *Sept 2020*
- Presented on Nanoscience research done with the Towson University Nanoscience Lab

Work Experience

June 2018 | **Lead Math Instructor**
Nov 2019 *Kumon Math & Reading Center, Cockeysville, MD*
- Led other math instructors and demonstrated excellent mathematical knowledge and communication skills
- Graded and tutored children ages 5 – 12 in mathematical skills

Scholarships & Grants

UMBC Merit Scholarship, *Fall 2020 – Spring 2024*

Awards & Honors

UMBC President's List, *Fall 2020*
USABO National Semifinalist (top 7% of 10,000 competitors), *May 2020*
AP Scholar w/ Distinction, *May 2019, May 2020*
Regional Chemistry Olympics 2nd place winner, *Feb 2018*
Regional Physics Olympics 3rd place winner, *May 2019, May 2020*
Colophon Literary Art Magazine Published Art (Towson High), *2018 – 2020*

Leadership Experience

Nov 2020 | **Devadas Nanoscience Lab Manager**
Present *Towson University*
- Assist P.I. in laboratory management tasks
- Mentoring junior lab members and teaching them how to use lab equipment

Sept 2019 | **Biology Club President**
May 2020 *Towson High School*
- Taught topics in Biology such as Immunology, Virology, and Anatomy & Physiology to members
- Competed in the National Biology Olympiad, 4/13 members passed the test (7% national pass rate)

Sept 2017 | **Programming Club President**
May 2020 *Towson High School*
- Taught topics ranging from JavaScript and C++ to competitive programming to members
- Competed in Lockheed Martin's annual CodeQuest competition in Bethesda, MD
- Grew members to 4 kyu level on codewars.org (70th percentile rating in competitive programming)

Sept 2018 | **Linguistics Club Vice-President**
May 2020 *Towson High School*
- Organized and competed in linguistics competitions, furthered interest and knowledge of linguistics
- Competed in the North American Computational Linguistics Open Competition, two passing members

Volunteer Experience

2016 | **Key Club**
2018 *Towson High School*
- Completed various volunteering opportunities such as gymnasium cleaning, after-school tutoring, and blood drive preparation (80+ hours)

Sept 2017 | **Dumbarton Middle School Math Help**
May 2018 *Towson High School*
- Went after-school to tutor students in Mathematics at the local Middle School (40+ hours)

May 2018 | **Greater Baltimore Medical Center Volunteer**
Aug 2018 *Towson, MD*
- Helped patients undergoing chemotherapy and cancer treatment acclimate to a hospital environment

Special Skills

Programming Languages & Software

○ Expert in Python, JavaScript, Advanced in C++/C and Java

○ Have utilized popular libraries like OpenCV, Tensorflow, PyTorch, and frameworks like ReactJS/Node.js

○ Experienced with both CellProfiler and ImageJ

Lab Equipment (Trained On and Utilized)

○ Scanning Electron Microscope, Plasma Cleaner, NMR, Fluorescence, UV-Vis, IR, HPLC

Math/Science Knowledge

○ Expert in Calculus and Biology, Advanced in Organic/Inorganic Chemistry and Linear Algebra

Spoken Languages

○ Fluency in Farsi and English, Intermediate in Spanish and Azeri

Hobbies

○ Drawing, taking photos of nature

○ Playing piano and violin

○ Programming and tinkering with electronics

○ Hiking, swimming, and playing basketball