MUHAMMAD MUJTABA

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Education:

M.S. in Physics **CGPA: 3.72/4.0** *Catholic University of America, D.C.* May 2021

During my **M.S. in Physics**, I developed a strong foundation in advanced scientific principles through coursework in **Advanced Mechanics**, **Theory of Electricity and Magnetism**, and **Advanced Quantum Mechanics**. These courses emphasized **analytical thinking** and **problem-solving**, essential for evaluating market potential and translating customer feedback into actionable insights for product development. I gained expertise in **wave-particle interactions**, **electron scattering**, and **electromagnetic field manipulation**, critical for compiling technical grant proposals. This experience enhanced my ability to interpret complex technical data and collaborate with multidisciplinary teams, ensuring that grant applications are precise, compelling, and aligned with UbiQD's product goals.

B.A. in Physics (Economics minor) **CGPA: 3.51/4.0** *Earlham College, IN* May 2018

My **undergraduate education** combined **physics** with **economics**, providing an interdisciplinary perspective valuable for both business and grant development. In **Electronics & Instrumentation** and **Advanced Physics Laboratory**, I gained hands-on experience with **circuit design**, **troubleshooting**, and **scientific programming**, fostering a methodical approach to problem-solving. I developed strong **communication skills** through technical reports and presentations, enabling me to convey complex scientific concepts to diverse audiences, including potential clients and grant agencies. Additionally, my **economics background** allows me to assess **market dynamics** and **commercial viability**, aligning with UbiQD's focus on linking customer needs with product development and securing grant funding.

Work Experience:

High School Math Teacher, *Green Tech High Charter School NY* Nov 2021 – Present

Fostered strong relationships with over **100 students and their families**, enhancing **academic progress** and **personal development**. Collaborated with **administration** and **advisors** to address academic challenges and implemented **data-driven curriculum strategies** aligned with **New York State standards**, focusing on **accessibility** and **inclusivity**.

Technical Experience:

Graduate Research Assistant, *Vitreous State Lab, Washington D.C.* June 2019 – Dec 2021

Operated and maintained advanced analytical equipment, including **optical tweezers**, **fluorescence microscopy**, and **X-ray diffraction (XRD)** systems, to study the mechanical properties of DNA molecules and structural characteristics of materials. Ensured optimal performance of equipment through regular calibrations and preventive maintenance.

Conducted detailed diagnostics on instruments, performing component replacements, alignments, and software updates as needed.

Utilized **oscilloscopes** and **multimeters** to troubleshoot electronic setups and verify system integrity, enhancing data reliability.

Provided training and support to incoming students on the usage of lab instruments and software such as **LabVIEW** and **MATLAB** for data acquisition and analysis.

Research Assistant, *National Institutes of Health, MD* June 2019 – Feb 2020

Upgraded the Biological Information Gatherer, a centralized database consolidating datasets from over 70 studies (over 90,000 data points). This tool enables researchers to efficiently access gene information without searching multiple sources, saving them up to 10% of their time.

Developed an **intuitive search engine interface** using **HTML, CSS, and JavaScript**, simplifying front-end operations and enhancing the monthly conversion rate to ~1.15, showcasing skills in optimizing user interfaces and supporting diverse end users.

Conducted A/B experiments to analyze various database and web architectures, leading to the implementation of the most effective one with an **SEO score of 91** according to Google's page speed insights.

Graduate Teaching Assistant, *Catholic University of America D.C.* Jan 2019 – Dec 2020

Led undergraduate mechanics and **electricity and magnetism labs**, guiding students through experiments and assisting them in understanding core principles.

Set up, explained, and troubleshot various lab instruments, including **oscilloscopes**, **function generators**, **multimeters**, and **DC power supplies**. Ensured accurate configurations and addressed issues promptly, fostering a smooth lab experience for students.

Managed **safety protocols and equipment maintenance**, ensuring the proper handling and secure storage of lab devices. Demonstrated **equipment upkeep** and **safe practices** in a high-use academic environment.

Skills:

Technical: Stata, Python, Java Script, SQL, IDL, Microsoft Office Products, Microsoft Excel

Accomplishments and Leadership:

Class Chair'18, Earlham College

Recipient of 2016 **Verne F. Swaim Memorial Scholarship** (Strong competence in Physics)

Recipient of 2017 **Gertrude Pardieck Hubbard Distinguished Student Award** (Outstanding work in Physics)