Abbas Mirza

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PROFESSIONAL SUMMARY

Biomedical and Mechanical Engineering graduate student skilled in SolidWorks, CAD, 3D printing, and prototype development, with hands-on experience in biomedical device projects. Seeking a role to apply my studies and previous experience to.

EDUCATION
GPA: 3.5

Drexel University | Master of Science in Biomedical Engineering and Bioinformatics — *Sep 2023 - Present*

Drexel University | Bachelor of Science in Mechanical Engineering — *Sep 2018 - Jun 2023*

PROJECTS

Master's Thesis: 3D-Printed Point-of-Care PEKK Vertebral Implant Development — *Dec 2024 - Present*
Drexel Implant Research Center
- Designing and fabricating patient-specific vertebral implants using Poly Ether Ketone Ketone (PEKK) thermoplastic
- Segmenting, 3D modeling patient CT images from Jefferson University Hospital with D2P and 3D Slicer
- Testing additive manufacturing techniques to optimize implant geometry and properties for fusion
- Collaborating with academic advisors and spine surgeons to ensure design feasibility and regulatory compliance

Collaborative Robotics Senior Design Project — *Oct 2022 - Jun 2023*
B&G Manufacturing
- Designed and prototyped end effectors with SOLIDWORKS, ANSYS Workbench, and 3D Printing to attach to an automated collaborative robot.
- Developed an automated cell for the lathing process on the manufacturing facility floor, saving the company **$100,000** in labor costs and improving employee safety.
- Tested the end effector for bolt transfer with FEA, FMEA, and full cost analysis documented on LinkedIn.

EXPERIENCE

Building Manager — *Nov 2023 - Present*
Drexel University Student Centers and Engagement
- Provided exceptional customer service by greeting visitors, answering inquiries, and ensuring a welcoming, secure environment
- Utilize interpersonal skills to respond in a timely manner to inquiries from Drexel guests and staff.
- Contribute towards media reviews by writing, editing, and proofreading article summaries to be sent to Drexel Business Services staff

Optical Manufacturing Co-Op — *Nov 2020 - Mar 2021*
Horiba Instruments
- Led internal research project to quantify optical paint samples, optimizing testing procedures that increased measurement accuracy and reduced costs by an estimated **$10,000** for OEM spectrometer products
- Collaborated with Optical and Mechanical Engineers to resolve material compatibility and alignment precision challenges through iterative testing and design adjustments, leading to successful integration into spectrometer production
- Integrated and tested fixture performance and economy through efficient sourcing of parts and fabrication with SOLIDWORKS, THORLABS, and McMaster-Carr
- Streamlined sample ordering and testing procedures, helping workflow inefficiencies and project documentation for future team use

Data Processing — *May 2019 - Dec 2020*
Skippack Medical Lab
- Shadowed technicians and phlebotomists on-site testing equipment, processes, and healthcare compliance
- Developed familiarity with healthcare compliance and patient data management
- Handled and processed patient samples with a focus on accuracy and efficiency
- Organized Blood and Culture Samples received for testing
- Categorized patient information for reporting, accessioning, and billing

Engineering Analyst — *Sep 2019 - Mar 2020*
Capital Project Management Inc.
- Evaluated major issues impacting projects including power facilities, embassies, commercial office buildings, heavy/highway projects, public works and educational facilities using the Critical Path Method
- Compiled complex data for analysis and summarization for ease of explanation in consulting work

SKILLS, CERTIFICATIONS, AND LEADERSHIP

Technical Skills:
Programming Languages: Python 3, MATLAB, R, LaTeX, SQL, BASH, HTML, PHP
Engineering Tools: SOLIDWORKS, Creo Parametric, Auto-CAD, 3D Printing, Fusion 360, CURA, FormLabs, Dicom to Print (D2P), Slicer 3D

Soft Skills:
Teamwork, Strong Organization, Critical Thinking, Research Paper Writing, Technical Report Writing, Microsoft Suite, Endnote, Regression Analysis, Hypothesis Testing, Simulation Modeling

Leadership Experiences:
Drexel University Student Concierge Lead and Trainer, FISDU Barrio Documentation Head and Fight Choreography Organizer, Intramural Volleyball Captain, Private Engineering and Mathematics Tutor

Certifications:
Codecademy Python 3 Certification, Coursera Google Data Analytics