ABDULLAH ARAFAT

Certified SOLIDWORKS Professional (CSWP)

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SKILLS

SOLIDWORKS, AutoCAD Plant 3D, ANSYS, ABAQUS, Fenics, Blender, Key Shot 8, Python, C++, Bash Scripting, LAMMPS, VMD, Ovito, VESTA, Materials Studio, Adobe Illustrator CC19, Adobe Photoshop CC19.

PROFESSIONAL EXPERIENCES

Khulna 9100, BD — **Emprotec Limited** — **Nov 2018 - Aug 2022**

Design Engineer:

- **Projects:** Designed **P&ID** of **16 underground and aboveground tanks**. | Designed P &ID of **2 centrifugal pump** systems for Delta LPG limited. | Designed **reticulation systems** for **4** apartments. | Designed **2 LPG Plant layouts** for Meghna LPG, Faridpur AM Industry. | Other projects: Designing Fire Safety layout, Firewater P&ID, Instrument air system for LPG Terminals, and Bill of Materials of valves for Delta LPG.

Khulna 9203, BD — **Fab Lab KUET** — **Aug 2019 - Mar 2020**

Operator:

- **Projects:** Fabrication of **13 undergraduate thesis projects** using a **3D Printer (Ultimaker 3)**. | Fabricated **1000 key rings** for two inter-university events using a **laser cutter (Epilog Laser MINI 18)** | Built **3 designs** using a **CNC Milling machine (Roland MDX-540)** | Maintained all the lab instruments.

TEACHING EXPERIENCE

Utah 84112, USA — **The University of Utah** — **Aug 2022 - Current**

Graduate Teaching Assistant (ME EN 3315 - Mechanics of Materials Lab)**:**

- **Experiments:** Tensile test | Torsion test | Riveted joint design | Bending test | Pressure vessel test | Combined loading | Experimental Design | Column buckling test

EDUCATION

Utah 84112, USA — **The University of Utah** — **Aug 2022 - May2024**

Mechanical Engineering, M.S (2nd semester)

- CGPA: 3.5/4.00
- Notable Courses: Theory of Linear Finite Element Method | Continuum Mechanics | Inelasticity | Molecular Simulation

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Khulna 9203, BD — **Khulna University of Engineering and Technology (KUET)** — **Feb 2017 - Mar 2022**

Materials Science and Engineering, B. S

- CGPA: 3.62/4.00 (class position: top 10%) | **Dean List Award 2018 (for academic excellence)**
- Notable Courses: Phase Diagram | Extractive Metallurgy | Corrosion and Surface Engineering | Materials Manufacturing Process | Welding and Metal joining Process | Mechanical Behavior of Materials | Physical Metallurgy of Materials.

EXTRA CURRICULAR EXPERIENCES

- 2022 - Now | SC2 - Scientific Computing Student Club | Position: **Member**
- 2018 - 2022 | KUET Career Club | Position: **Head of IT and Resource**
- 2018 - 2020 | CADers (Computer Aided Design club of KUET) | Position: **Head of IT and Resource**
- 2017 - 2020 | Spectrum (Professional Skill Development Club of KUET) | Position: **Chief Technology Officer (CTO)**
- 2018 - 2019 | Youth Opportunities (YO) | Position: **Campus Ambassador**
- 2018 - 2019 | YSI Bangladesh | Position: **Head of Campus Representatives**

KEY ACHIEVEMENTS

- 2020 | ASME CUET Extrusion CAD Contest | **1st Runner up** out of 100
- 2018 | Wash Innovation Challenge 2018 | Organized by UNICEF and BRAC **| Finalist team (South Asia Region)** among 7 countries
- 2018 | Ignition 2018 CAD Contest | **Champion** out of 150
- 2018 | IPE Fest 2018 CAD Contest | **2nd Runner up** out of 75
- 2015 | 9th International Olympiad On Astronomy and Astrophysics (IOAA) **| Finalist (International Team)** among 132 countries
- 2015, 2013 | Bangladesh Astro Olympiad **| Champion** out of 500

CERTIFICATIONS

- **Certified SOLIDWORKS Professional (CSWP)**
  Score: 318/318 | Organization: Dassault Systèmes | Credential ID: C-A6HWVU5MSB
- **Certified SOLIDWORKS Associate (CSWA)**
  Score: 240/240 | Organization: Dassault Systèmes | Credential ID: C-49FPLUKRNS

OTHER COURSES

- Course Title: **From Atoms to Materials: Predictive Theory and Simulations** | Institution: PurdueX | Platform: Edx | Status: Completed
- Course Title: **Materials Data Sciences and Informatics** | Institution: Georgia Institute of Technology | Platform: Coursera | Duration: 1 month. (August 2019) | Grade: 91.1% | Credential ID: 4NJG5524REYV
- Course Title: **Python for Data Science and AI** | Company: IBM | Platform: Coursera | Duration: 1 month. (February 2020) | Grade: 98% | Credential ID: MBAN9P4DZGBD
- Course Titles: **Design for Machining, Design for Additive Manufacturing, Abaqus Heat Transfer, Abaqus Stress Analysis, Abaqus Thermal Stress and Deformation, SOLIDWORKS Efficient Modeling and Design Intent, SOLIDWORKS Mold Tools and Plastic Design** | Platform: SOLID professor | Duration: 2-3 months
- Course Title: **Using Python for Research** | Institution: HarvardX | Platform: Edx | Status: Ongoing

RESEARCH PUBLICATIONS

Book Section

1. Mubin, Shafat, Jichen Li, and Steven Plimpton. Extending and Modifying LAMMPS Writing Your Own Source Code: A pragmatic guide to extending LAMMPS as per custom simulation requirements. Packt Publishing Ltd, 2021: **Page(304-311)**

Journals

2. **Arafat, Abdullah**, Md Islam, Naim Ferdous, A. S. M. Islam, Md Sarkar, Mosarof Hossain, Catherine Stampfl, and Jeongwon Park. "Atomistic reaction mechanism of CVD grown MoS2 through MoO3 and H2S precursors." Scientific Reports 12, no. 1 (2022): 1-12.
3. Hossain Sarkar, Md Mosarof, Md Sherajul Islam, **Abdullah Arafat**, ASM Jannatul Islam, Naim Ferdous, Md Tawabur Rahman, Minhaz Uddin Sohag, Md Al Imran Fahim, Catherine Stampfl, and Jeongwon Park. "Effects of the Substrate Structure on the CVD Growth of Two-Dimensional Hexagonal Boron Nitride." The Journal of Physical Chemistry C 126, no. 14 (2022): 6373-6384.
4. Komol, Md Mostafizur Rahman, Md Karimul Joarder, **Abdullah Arafat,** and Amit Kumer Podder. "Fingerprint and password controlled garage access system with belt pulley and power screw driven mechanism." International Journal of Advanced Mechatronic Systems 8, no. 1 (2020): 36-45**.**
5. Komol, Md Mostafizur Rahman, Amit Kumer Podder, **Abdullah Arafat,** and Tanzim Nabeed. "Remote sensing global ranged door lock security system via mobile communication." International Journal of Wireless and Microwave Technologies 9, no. 5 (2019): 25-37.

Conference

6. Md. Jarir Hossain, Md. Mahbubur Rahman, Fahim Islam Anik, MD Ikramul Hasib, **Abdullah Arafat.** "Numerical Investigation on Fatigue Life Estimation of Aluminum Structure for Uniaxial Cyclic Loading by Finite Element Modeling." International Conference on Mechanical Engineering and Renewable Energy 2019 (ICMERE2019)

REFERENCES

Dr. Pania Newell
Assistant Professor
Department of Mechanical Engineering;
(Adjunct Professor-School of Computing)
The University of Utah
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Dr. Sazzad Ahmad
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Head of Department of Materials Science and Engineering
Chittagong University of Engineering and Technology (CUET)
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