PRIONTU CHOWDHURY

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Education

02.2020-06.2023 *(Germany)*
BSc Electrical and Computer Engineering, *Jacobs University Bremen*
CGPA (Scale): 1.26 (EU) / 3.9 (US)
Relevant Courses: *Machine Learning, Computer Vision, Artificial Intelligence, Programming in C/C++, Robotics, Algorithms and Data Structures, Embedded Systems, Electronics, Probability and Random Processes, Numerical Methods, Information Theory, Digital Signal Processing, Signals and Systems, Electromagnetism, Digital Design, Wireless Communications, Control Systems, PCB Design and Measurement Automation*

09.2022-12.2022 *(USA)*
BSc Electrical and Computer Engineering, *Drexel University(Exchange Program)*
CGPA (Scale): 3.92 (US)
Relevant Courses: *Machine Learning Practicum, Design with Embedded Processors*

Experiences

06.2022 - 08.2022 (Abstatt, Germany)
Software Engineer (Syslog Analysis), *Motorsport*, Bosch Engineering GmbH
- Worked on developing a framework for System Log Data Analysis for race car devices for the Motorsport Data Acquisition Team. The tasks required proficiency in Python and C++.
- Knowledge in use of tools such as Anaconda, Pandas, Regex, OOP, and STL were also required. PyQt5, PySide6, HTML, CSS and Javascript used in development of different UI.
- The framework is designed to read large amounts of system log data from different devices in race cars, parse the dataset, correct datetime anomalies, extract important info required for analysis, and create reports in desired formats (HTML, LATEX, pdf etc.). It required very good understanding of the LTE System offered by Bosch Motorsport, and the analysis tool Windarab.

02.2022 - 05.2022 (Bremen, Germany)
Teaching Assistant, *Algorithms and Data Structures*, Jacobs University Bremen
- Demonstrated use of Dynamic Programming and Greedy Approach in solving conceptual problems.
- Illustrated application of graphing algorithms such as Breath-First Search, Depth-First Search, Prim's, Dijkstra and Bellman-Ford in path finding solutions.
- Provided tutorials on execution and asymptotic analysis of relevant algorithms and data structures (Quick Sort, Binary Tree etc.).
- Graded assignments, helped students with debugging code, and provided tutorials.

02.2022 - 05.2022 (Bremen, Germany)
Teaching Assistant, *Digital Design*, Jacobs University Bremen
- Graded asignments and assisted with FPGA programming in Design Labs.
- Instructed on the application of Gates, Registers, Multiplexers, Decoders, Counters, Flip Flops, Finite State Machines etc. in developing Digital Circuit models on the FPGA board.
- Lab tasks included implementation of sequential programming concepts in constructing a 7-Segment Decoder and a UART transmitter on an FPGA board, using Vivado IDE for VHDL programming and simulation.

09.2021 - 12.2021 (Bremen, Germany)
Teaching Assistant, *Programming in C and C++*, Jacobs University Bremen
- Graded assignments, provided tutorials and helped students with debugging code.
- Some content dealt with on a regular basis:
  - Object Oriented Programming(friend functions, Overloading, Polymorphism, Abstract Classes, Multiple Inheritance etc.), Pointer Arithmetic, Dynamic Memory Allocation, Multidimensional Arrays, Structs, Function Pointers, Bit Operations/Masking, File Handling, Exception Handling
  - STL Library: Vectors, Queues, Linked Lists, Sets, Multisets etc.

07.2016 - 07.2018 (Bangladesh)
Assistant Teacher, *Computer Science*, Sunshine Grammar School
- Covered topics such as Data Representation, Compression, Logic Gates and Logic Circuits, CPU Architecture, Operating Systems, Assembly Language and Database Management Systems, among others.

Technical Skills

Languages	C, C++, C#, Python, VHDL, Javascript, HTML/CSS, Latex, MATLAB, SQL, MongoDB
Library	Scikitlearn, Keras, Tensorflow, Pandas, NumPy, Matplotlib, VBA, STL, React.Js
Framework	Tf-Agents, OpenAI Gym, OpenCV, QT Framework (PyQt5, PySide6, Qt C++), Flask, Git
Software	Google Cloud, Docker, Node.js, Unity3D, Ms Office, Chrome DevTools, Git Extensions, Linux
Hardware	Arduino, Beaglebone Black, Raspberry Pi, Basys3(FPGA), Spartan3(FPGA), PocketBeagle

Projects (2012 - 2021)

Syslog Analysis Framework: Bosch Motorsport
- Framework used for processing Bosch Telemetry log data for Analysis – developed using Python, C++, Javascript, QT Framework and Pandas.

Atari SpaceInvaders Gameplay with Reinforcement Learning using TF-Agents, *(Github)*
- Implementing Reinforcement Learning to develop an Agent that teaches itself to play the Space Invaders Atari Game. The Agent was developed using tensorflow, TF-Agents and OpenAI Gym on Google Cloud Platform.

Atari Gopher Gameplay with Reinforcement Learning using TF-Agents, *(Github)*
- Implementing Reinforcement Learning to develop an Agent that teaches itself to play the Gopher Atari Game. The Agent was developed using tensorflow, TF-Agents and OpenAI Gym on Google Cloud Platform.

Atari DemonAttack Gameplay with Reinforcement Learning using TF-Agents, *(Github)*
- Implementing Reinforcement Learning to develop an Agent that teaches itself to play the DemonAttack Atari Game. The Agent was developed using tensorflow, TF-Agents and OpenAI Gym on Google Cloud Platform.

Atari Pong Gameplay with Reinforcement Learning using TF-Agents, *(Github)*
- Implementing Reinforcement Learning to develop an Agent that teaches itself to play the Pong Atari Game. The Agent was developed using tensorflow, TF-Agents and OpenAI Gym on Google Cloud Platform.

Flower Predictor, *(Github)*
- A Flower Predictor developed using Keras on Tensorflow, ImageNet and Oxford Flowers dataset.

Sentiment Analysis, *(Github)*
- Sentiment Analysis from IMDB reviews using Keras on Tensorflow.

ADOPT ME (Dog Adoption Website), *(Github)*
- Dynamic website with attractive interface developed with React.Js, Redux, JSX and HTML/CSS.

Travel Agency Management System, *(Github)*
- Complete custom software solution with user-friendly interface made using VBA and MS Access.

Box Shooter Project (Unity3D), *(Github)*
- "Box Shooter" game made with Unity3D for course "Introduction to Game Development".

Roller Madness (Unity3D), *(Github)*
- "Roller Madness" game made with Unity3D for course "Introduction to Game Development".

UART Transmitter, *(Github)*
- FPGA programmed to send data to computer through serial port using UART protocol. Developed using VHDL on Vivado.

Languages

English(C2), German(B1+), Bengali(C2), Hindi(B2)

Awards and Achievements

09.2022 (USA) **Exchange Program Sponsorship: Drexel University**
- The tuition for my exchange program was sponsored by Drexel University.

08.2022 (Germany) **DAAD-PROMOS Scholarship**
- Offered by German Academic Exchange Service (DAAD), financed by German Ministry of Education and Research.

08.2022 (Germany) **Study Abroad Scholarship: Jacobs University Bremen**
- Merit scholarship awarded by Jacobs to support cost of Study Abroad.

01.2020 (Germany) **Merit Scholarship: Jacobs University Bremen**
- Merit scholarship awarded for excellent academic record, providing funding for the duration of undergraduate study.

06.2016 (Bangladesh) **National Award: The Nation Builder of Tomorrow, The Daily Star Foundation**
- Awarded for achieving a nationally high score in Cambridge A Level exam, with 4 A*s.

03.2014 (Bangladesh) **National Award: Bangladesh Physics Olympiad**, National Rank: 12
- Awarded for achieving the 12th rank nationally in Bangladesh Physics Olympiad.

Certifications

06.07.2016 **Object-Oriented Data Structures in C++** (Coursera Certificate)

27.05.2016 **Machine Learning** (Coursera Certificate)

09.07.2016 **Python Data Structures** (Coursera Certificate)

06.07.2016 **Using Databases with Python** (Coursera Certificate)

06.07.2016 **Using Python to Access Web Data** (Coursera Certificate)

09.03.2016 **Introduction to Game Development** (Coursera Certificate)