

# Ashaduzzaman Sarker

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CAREER OBJECTIVE	Seeking a challenging position in a progressive and innovative environment where I can leverage my expertise in Artificial Intelligence, Data Science, and Machine Learning to contribute to organizational growth and technological excellence.
ACADEMIC BACKGROUND	<p><b>Bachelor of Science (BSc) in Electrical and Electronic Engineering</b> BRAC University, Dhaka, Bangladesh   CGPA: 3.21/4.00   Graduated: 2021</p> <p><b>Higher Secondary Certificate (HSC)</b> Cantonment Public School and College, Rangpur   GPA: 5.00 (Golden A+)   Year: 2015</p> <p><b>Secondary School Certificate (SSC)</b> Sathibari ML High School, Rangpur.   GPA-5.00 (Golden A+)   Year: 2013</p>
EXPERIENCE	<p><b>Research Assistant (Data Management)</b> <i>Centre for Entrepreneurship Development (CED), BRAC University   (June 2022 – Present)</i></p> <ul style="list-style-type: none"><li>❖ Conducted extensive research and collected, curated, verified, analyzed and presented up-to-date data on Bangladesh's RMG industry, focusing on supply chain visibility, ESG indices, sustainability practices, and renewable energy adoption.</li><li>❖ Key projects include:<ul style="list-style-type: none"><li>▪ <i>Mapping export-oriented factories Mapped in Bangladesh (MiB)</i> - <a href="#">[Link]</a> <a href="#">[Map]</a></li><li>▪ <i>Exploring Adoption of Renewable Energy Technology (RET) among Apparel Exporters</i> - <a href="#">[Link]</a></li><li>▪ <i>Addressing Climate Change and Plastic Waste in Bangladesh's Garment Industry</i> - <a href="#">[Link]</a></li></ul></li></ul>
CERTIFICATIONS	<ul style="list-style-type: none"><li>❖ <b>IBM AI Engineering Specialization</b>   Certified by IBM – <a href="#">[Link]</a></li><li>❖ <b>Deep Learning Specialization</b>   Certified by <i>DeepLearning.AI</i> - <a href="#">[Link]</a></li><li>❖ <b>Machine Learning Specialization</b>   Certified by <i>Stanford Online &amp; DeepLearning.AI</i> - <a href="#">[Link]</a></li><li>❖ <b>IBM Data Science Specialization</b>   Certified by IBM - <a href="#">[Link]</a></li><li>❖ <b>TensorFlow Developer Specialization</b>   Certified by <i>DeepLearning.AI</i> - <a href="#">[Link]</a></li></ul>
TECHNICAL SKILLS	<p><b>Python Programming:</b> Advanced Python programming skills for AI, ML, and deep learning applications.</p> <p><b>Machine Learning:</b> Machine learning algorithms, applied ML, regression techniques, and mathematical analysis.</p> <p><b>Deep Learning:</b> Deep learning models, CNN, RNN, artificial neural networks, and network architecture.</p> <p><b>Natural Language Processing (NLP):</b> Text classification, sentiment analysis, named entity recognition (NER), machine translation, sequence-to-sequence modeling, Hugging Face Transformers.</p> <p><b>Computer Vision:</b> CNNs, Vision Transformers, image classification, object detection, segmentation, ResNet, EfficientNet, SAM, U-Net, model fine-tuning.</p> <p><b>Multimodal Vision-Language Models:</b> CLIP, ViLT, Visual Transformers, image captioning, visual question answering, cross-modal retrieval.</p> <p><b>Large Language Models (LLMs):</b> GPT-3, T5, BERT, text generation, question answering, summarization, causal and masked language modeling, transformer architectures, domain-specific fine-tuning.</p> <p><b>Data Science:</b> Python (Pandas, NumPy, Matplotlib), data cleaning, transformation, exploration, statistical analysis, logistic regression, decision trees, time series forecasting (ARIMA, LSTM, Transformer models).</p> <p><b>Generative AI:</b> Generative models and their applications in AI development.</p> <p><b>SQL &amp; Database Management:</b> SQL database administration, dataset handling, and data-driven applications.</p> <p><b>Software Tools:</b> Skilled in using RStudio, Jupyter Notebooks, Hugging Face, Weights &amp; Biases and GitHub for AI/ML development and version control.</p> <p><b>Analytical &amp; Problem Solving:</b> Strong analytical and critical thinking skills, with a solution-oriented mindset.</p> <p><b>Communication &amp; Collaboration:</b> Effective communicator, capable of working in team-oriented environments.</p> <p><b>Frameworks:</b> TensorFlow, PyTorch, Keras.</p>

PROJECTS	<b>Natural Language Processing (NLP) &amp; Large Language Models (LLMs):</b> <a href="#">[GitHub]</a>	
	<ul style="list-style-type: none"><li>▪ <b>Text Sentiment Classification on IMDB &amp; MRPC Datasets (PyTorch &amp; TensorFlow):</b> Designed sentiment analysis models to classify text sentiment and detect paraphrases. Utilized Bidirectional LSTM and Transformer architectures to achieve high performance.</li><li>▪ <b>Text Summarization with T5 &amp; mT5 (PyTorch):</b> Developed models to generate concise summaries from legal and consumer review texts, demonstrating advanced sequence-to-sequence modeling.</li><li>▪ <b>Named Entity Recognition (NER) with Transformers (PyTorch &amp; TensorFlow):</b> Created and optimized token classification models for named entity recognition, achieving high precision on datasets like CoNLL-2003.</li><li>▪ <b>Sequence-to-Sequence Transformers (PyTorch &amp; TensorFlow):</b> Engineered translation models to convert text between English and Spanish with high accuracy, using Marian and T5 models.</li><li>▪ <b>Masked Language Modeling with DistilBERT &amp; DistilRoBERTa (PyTorch):</b> Enhanced language models' contextual understanding through masked language modeling, improving language comprehension on datasets like IMDB.</li><li>▪ <b>Causal Language Modeling with GPT-2 &amp; DistilGPT2 (PyTorch):</b> Implemented causal language models, generating coherent and contextually appropriate text on datasets like ELI5 and CodeParrot.</li><li>▪ <b>Question Answering with BERT &amp; DistilBERT (PyTorch):</b> Engineered advanced question-answering models using BERT and DistilBERT, achieving high accuracy on SQuAD and SWAG datasets.</li></ul>	
	<b>Computer Vision:</b> <a href="#">[GitHub]</a>	
	<ul style="list-style-type: none"><li>▪ <b>Image Classification with Vision Transformers &amp; CNNs (Keras &amp; PyTorch):</b> Implemented state-of-the-art image classification models on diverse datasets like CIFAR-100 and MNIST.</li><li>▪ <b>Object Detection with RetinaNet &amp; Vision Transformers (PyTorch):</b> Engineered object detection models, achieving high precision in localization and classification tasks.</li><li>▪ <b>Image Segmentation with SAM &amp; U-Net (Keras &amp; PyTorch):</b> Developed high-precision models for image segmentation, fine-tuning models like Segment Anything Model (SAM) and U-Net for exceptional accuracy.</li></ul>	
	<b>Multimodal Vision-Language Models:</b> <a href="#">[GitHub]</a>	
RESEARCH INTEREST	<ul style="list-style-type: none"><li>▪ <b>Image Captioning:</b> Fine-tuned a GIT image captioning model on the Pokémon BLIP dataset using PyTorch and Visual Transformers to generate descriptive captions for images.</li><li>▪ <b>Document Question Answering (DocVQA):</b> Fine-tuned LayoutLMv2 for document question answering on the DocVQA dataset, utilizing PyTorch for model optimization.</li><li>▪ <b>Visual Question Answering (VQA):</b> Fine-tuned a Visual Question Answering (VQA) model (ViLT) on the Graphcore VQA dataset, employing PyTorch for enhanced performance in answering questions about images.</li><li>▪ <b>Text-to-Speech (TTS):</b> Fine-tuned SpeechT5 for the text-to-speech task on the VoxPopuli dataset, using PyTorch to improve speech synthesis quality.</li><li>▪ <b>Image-Text-to-Text:</b> Developed models for tasks involving image-text relationships, integrating various architectures.</li></ul>	
	<b>Computer Vision, Natural Language Processing (NLP), Large Language Models (LLMs), Vision Language Models (VLMs)</b>	
ACADEMIC ACHIEVEMENTS	<b>Talent Pool Scholarship in Primary School Scholarship Examination (PSC) [2007]</b>	
	<b>Talent Pool Scholarship in Junior School Scholarship Examination (JSC) [2010]</b>	
	<b>BRAC University Merit Based Scholarship [2017]</b>	
LANGUAGES	<b>BANGLA:</b> Native speaker   <b>ENGLISH:</b> Proficient	
PROFESSIONAL AFFILIATION	<ul style="list-style-type: none"><li>▪ <b>R&amp;D Laboratory, Department of EEE, BRAC University</b>   <i>Research Intern (July 2019- Feb 2020)</i></li><li>▪ <b>TEN'S 360-A Digital Marketing Agency</b>   <i>Digital Marketing Intern (Apr 2017- Dec 2017)</i></li><li>▪ <b>IEEE BRAC University Student Branch</b>   <i>General Member (February 2018-Jan 2021)</i></li><li>▪ <b>Robotics Club of BRAC University</b>   <i>General Member (Jan 2017- Dec 2020)</i></li><li>▪ <b>International Conference on Energy and Power Engineering (BRACU)</b>   <i>Volunteer (March 2019)</i></li></ul>	
REFERENCES	<b>Abu S.M. Mohsin, PhD</b> Associate Professor, Department of EEE, BRAC University. Email: asm.mohsin@bracu.ac.bd	
	<b>Taiyeb Hasan Sakib</b> Senior Lecturer, Department of EEE, BRAC University. Email: taiyeb.sakib@bracu.ac.bd	