MASUBA AARON

BACHELOR OF SCIENCE ELECTRICAL & ELECTRONIC ENGINEERING.
STUDENT, BRAC UNIVERSITY.

About Me

I am a creative and brilliant young innovator and engineering student at BRAC University in Dhaka, Bangladesh. Born in Uganda, I have always been passionate about using my cognitive empathy to make my surrounding better. I am a visionary and an inclusive leader. I dislike noise and spicy food.

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Skills

- Public Speaking & Presentation
- Leadership & Teamwork
- Critical & Systems thinking
- Problem Solving & Innovation
- Troubleshooting
- Engineering & Design
- Whole System Mapping
- Research & Development
- Project Management
- AI, ML and IoT
- Backend Development

Education

Bachelor of Science in Electrical and Electronic Engineering
BRAC University 2020-2023

Advanced (A) Level Certificate (UACE)
St.Stephen's College Bajja 2017-2018

Ordinary (O) Level Certificate (UCE)
St.Stephen's College Bajja 2013-2016

Primary Level Education (PLE)
Bukasa Primary School 2005-2012

Experience

Open Society University Network, OSUN.
2022-Present, Global Media Fellow.

Through my leadership capabilities, I was selected as a Global Media Fellow by OSUN to represent BRAC University in Dhaka.

Intel Corporation, USA.
2022-Present, Student Ambassador.

In Fall of 2022, I was selected as a student Ambassador at Intel Corporation for oneAPI program. I am undertaking training on oneAPI a unified, cross-architecture performance programming model. I have learnt and implemented Code on High Performance Computing platforms via Intel DevCloud, Artificial Intelligence and Visualization through rendering toolkits. I am organizing a Workshop to introduce students to thesame tools to accelerate innovation in Universities among students.

Clinton Global Initiative University, CGIU.
2022-Present, Global Commitment Fellow.

As a Class of 2022 Global Fellow at the Clinton Global Initiative University by President Bill Clinton, I led my team on our innovation of KasanaShare an IoT and ICT enabled peer to peer energy sharing and exchange platform. This innovation was directed to achieving sustainable proliferation of renewable energy sources in resources constrained and energy poverty areas to combat the climate crisis and achieve SDG 7 and SDG 11.

Certifications

Intel DevCloud
Issued by Intel Corporation.
Issued Sep 2022 - No Expiration Date
Credential ID E-VD4D20
Intel DevCloud is a data center grade cluster that allows one to develop and test projects with Intel oneAPI toolkits

Introducing oneAPI
Issued by Intel Corporation.
Issued Sep 2022 - No Expiration Date
Credential ID E-VNPJ90
OneAPI is a unified, cross-architecture performance programming model for next generation computation.

Renewable Electric Systems
Issued by EPRI.
Issued Jul 2022 - No Expiration Date
Credential ID GEARED: ASU_EEE 598

Utility Applications of Power Electronics
Issued by EPRI.
Issued Jul 2022 - No Expiration Date
Credential ID GEARED: UNCC_ECGR 4090

Certified Specialization in Solar Energy for Engineers, Architects & Code Inspectors
Issued by Coursera. Offered by University at Buffalo.
Issued Jun 2022 - No Expiration Date
Credential ID HUJA8AKHGHU3
This specialization consisted of three courses: Solar Energy Systems Overview, Solar Energy and Electrical System Design and Solar Energy codes, Permitting and Zoning.

Build a Data Science Web App with Streamlit and Python
Issued by Coursera Course Certificates.
Issued May 2022 - No Expiration Date
Credential ID KET3486BFJGC

Creating Web App with Python and Flask
Issued by Coursera Course Certificates.
Issued May 2022 - No Expiration Date
Credential ID NQ9VXJ6T89SM

An Overview of Quantum Computing and Quantum Electronics
Issued by Keysight Technologies.
Issued Jan 2022 - No Expiration Date
Credential ID E-P0YQGV

The Arduino Platform and C programming
Issued by Coursera. Offered by University of California, Irvine.
Issued Aug 2021 - No Expiration Date
Credential ID URCJH8NHU2BJ

Introduction to the Internet of Things and Embedded Systems
Innovating with Business Model Canvas
Issued by Coursera. Offered by University of California, Irvine.
Issued Jul 2021 - No Expiration Date
Credential ID H5XLMXW977ZY

Building Smart Business Assistants with IBM Watson
Issued by Coursera.
Issued Jun 2021 - No Expiration Date
Credential ID T2XLFQGXY5DH
Issued by Coursera. Offered University of Virginia.
Issued Apr 2021 - No Expiration Date
Credential ID L6HF7HC22QL4

University of Paderborn, Germany.
September 2022, Guest Lecturer.

Based on my research and innovations on renewable energy systems and Microgrids, I was invited to give a guest lecture at the Graduate Energy Training program for Sustainable Development a one week session organized by Africa Research and Teaching for Development Grids. I presented my technology, the AMLIIoT (Applied Machine Learning and the industrial internet of Things) Architecture a sustainable state-of-the-art system control suite for scalable integration of renewable energy sources in the electricity grid and utility networks.

Engineering for One Planet, USA.
June 2022, Workshop Contributor.

During this scaling for impact workshop organized by Venturewell, ABET and the National Science Foundation with support from the Lemelson Foundation, I contributed on the EOP Initiative that seeks to transform engineering curriculum to include environmental sustainability as a core value in the profession. Within the diverse group that comprised of educators, engineers and other stakeholders, we explored, identified, prioritized approaches for scaling EOP Initiative generating ideas to guide the creation of a 5-year road map for scaling EOP.

FXB International, USA.
Spring 2022, Climate Advocate.

In the Spring of 2022, I was selected to participate in the FXB Climate Advocates program that convenes young people all around the world innovating and engaging communities to address challenges surrounding climate change, food security, energy poverty and clean water and sanitation. I participated in training and exchange programs including skilling FXB International Staff in Africa on how to amplify social impact through inclusive innovations engaging more young people and the elderly. I presented Project KasanaShare.

TEDx BRACU, Countdown.
December 2021, Guest Speaker.

I was invited to be part of the six-member panel Speaker team that presented at the TEDx BRACU, Countdown on climate Change. I presented highlighted the need to contextualize climate solutions as there is no one size fit for all. I additionally presented my United Nations Academic Impact Fellowship project CliviScope a technological ensemble to accelerate rehabilitative and regenerative climate actions through artificial intelligence and the internet of things.

United Nations Academic Impact.
2021, Millennium Fellow.

Partnering with MCN, I was presented as a Millennium Fellow class of 2021. This is a very competitive opportunity for students to transform their social impact projects and create an impact amplifying Sustainable Development Goals (SDGs) through bold, innovative and inclusive ideas. I worked on SDG 13 of climate action and UNAI Impact principle 9 of promoting sustainability through education. I presented Project CliviScope

Innovation Projects

AMLIIoT Architecture
Associated with Intel Corporation.
Initiated August 2022 - Present
Stage: Under Development
AMLIIoT Architecture is a sustainable, modular system control suite based on state-of-the-art intelligent electronic devices for state-of-awareness in smart control applications including power and energy systems.

KasanaShare
Associated with Afrosoltech Industries Ltd.
Initiated Dec 2021 - Present
Stage: Under Development
KasanaShare or ElectricShare is a an IoT and ICT enabled peer to peer green renewable energy sharing and exchange platform. This project has received numerous recognitions from UN Habitat, UNFCCC, Viable cities and Climate Smart Cities Challenge receiving a finalist Award. It targets a number of Sustainable Development Goals (SDGs) key to improving quality of life and wellbeing of humanity.

CliviScope
Associated with BRAC University and United Nations Academic Impact.
Initiated Mar 2021 - Present
Stage: Pilot Study
CliviScope is an ensemble of technological devices that accelerate rehabilitative and regenerative climate actions through artificial intelligence, machine learning and the internet of things. This looks into the future of Climate Resilience Action Plans.

Lungenia
Associated with IBM Call for Code, AI Spot Challenge.
Initiated Jul 2021 - August 2022
Stage: Completed and Closed off.
Lungenia is a Watson AI powered tool for detection tool for silica exposure. Silica exposure affects workforce working in occupationally hazardous areas such as mines, heavy construction and climate accelerated risks. Early susceptibility of workforce is key to preventing silicosis and lung disease. I deployed an AI algorithm to optimize exposure. The project won 2nd Runner Up Prize of the IBM AI Spot Challenge organized by Call for code and David Clark Cause.

Clean Water IoT (CWIoT)
Associated with K4T Lab, Climate Innovation and Adaptation Research Centre (CITARC).
Initiated Apr 2021 - Present
Stage: Pilot Study but Paused
CWIoT uses GIS, IoT enabled remote sensing and Chatbot recommendation system. The project aims to increase access to clean drinking water and protect existing water sources through informatics and computing. A GIS dashboard and chatbot recommendation systems were fully developed and due to limited finance, the IoT enabled remote sensing was not piloted hence paused.

Quagris
Associated with K4T Lab, Climate Innovation and Adaptation Research Centre (CITARC).
Initiated Jul 2021 - Present
Stage: Concept
Quagris is a project Qualitative Agriculture focused project aiming at increasing capacity for food security and improving the agricultural ecosystem. Amongst the subprojects is PathoScope AI, which aims to study pathological plant diseases and implement AI-enabled algorithms for early detection and mitigation. Other concepts include agricultural automation and robotic applications.

Bangladesh Youth Leadership Center. March 2021, Delegate.

I was a delegate at the Climate Summit organized by Bangladesh Youth Leadership Center, BYLC.

Mogas Refueling Station c/o SKM International Investments Limited. 2019 - 2020, Station Supervisor.

On 2nd January 2019 after my A - levels in December 2018, I was appointed as a Station Supervisor for an Oil and Gas Refueling Station. I assisted the Station Manager with sales promotion, staff supervision, station performance monitoring, taking meter readings every before and after shifts, carrying out dips and balancing the daily stock of fuel products, airtime, lubricants, drinks etc., submitting head office monthly profits realized from the sales of items (sold) at the station, advising head office on (placement) of fuel orders, responsible for safety and banking of the station's cash, giving full accountability of the money spent at the station, submitting to head office monthly reports relating to the performance of the station and any other duties that were assigned by management to promote station performance.

Shamon Metal Fabricators Ltd January - March 2017, Welder.

I worked as a Welder during my O - Level vacation at a Construction site. I was responsible for repairing and welding wheelbarrows, detached hammers, assembling and welding tie-rods used for binding column shapes. Additional duties included making cages for critical infrastructure used at the construction site such as water pumps, generators and portable machines.

Publications

Data-Driven Ensembles for Transparency
Associated with Open Society University Network, OSUN.
Published Dec 2022
Stage: Abstract complete
A hefty kink has been buckled in the transparency and governance of these societies. Data-driven viewpoints have proven an effective and engaging mechanism where decisions are taken on grounds of factoids analysis and exegesis other than reminiscence tales. This study aims to develop a gold standard of societal approach which is non-interventional but rather engaging to emancipate the shackles of oppression and regenerate proactive society capacity based on justice, equity, diversity, and inclusion.

Study of AMLIIoT Architecture for Microgrids
Associated with International Conference on Power and Energy, BRACU
Published Unknown
Stage: Under review
Applied Machine Learning and Industrial Internet of Things (AMLI-IoT) are rapidly emerging technologies for real-time monitoring and controlling key infrastructure within this Fourth Industrial Revolution. As a matter of fact, experts cite that the convergence of Information Communication Technologies (ICTs) and intelligent systems via Artificial Intelligence (AI), the Internet of Things (IoT), and Big Data are the electricity of today's revolution.

Presentations & Conferences

Data-Driven Ensembles for Transparency
Associated with Open Society University Network, OSUN.
Published Dec 2022
Stage: Awaiting for Presentation
A hefty kink has been buckled in the transparency and governance of these societies. Data-driven viewpoints have proven an effective and engaging mechanism where decisions are taken on grounds of factoids analysis and exegesis other than reminiscence tales. This study aims to develop a gold standard of societal approach which is non-interventional but rather engaging to emancipate the shackles of oppression and regenerate proactive society capacity based on justice, equity, diversity, and inclusion.

oneAPI for Renewable Energy Proliferation
Associated with Intel Corporation, AI DevSummit 2022.
Published Dec 2022
Stage: Awaiting Presentation
Propagation of renewable energy sources in resource-constrained countries' electricity networks presents enormous challenges starting with a heightened incidence of energy poverty. This study, therefore, presents an architectural suite ensemble enabled by the Intel one API AI technology to decode the uncertainties in renewable energy source propagation in least-developed countries' electricity networks and open new capabilities to tackling the complexities in design, operation, and sustenance of microgrid and utility grid networks.

Green Revolution and Food
Associated with BRAC University.
Published Nov 2022
Stage: Presentation Upcoming
The Green revolution and food shall be a guest lecture at BRAC university where I shall teach students about the technological advancements in the energy, water and food nexus and create an icebreaker for them to take action.

AMLIIoT Architecture
Associated with Intel Corporation.
Published Sept 2022
Stage: Technology Under Development
AMLIIoT Architecture is a sustainable, modular system control suite based on state-of-the-art intelligent electronic devices for state-of-awareness in smart control applications including power and energy systems.

The Intersection of Energy and Climate Change
Associated with FXB international, USA.
Published Oct 2022
Stage: Presentation Complete
A presentation was made to FXB Staff aligning the importance of innovation and sharing lessons from KasanaShare an ICT and IoT-enabled peer-to-peer energy training and exchange platform. Within this very session, a training program was conducted which was consequently named the hanging dots: knowledge as a tool for transformation in climate action.

Microgrid System Control and Management Suite
Associated with Paderborn University.
Published Sept 2022
Stage: Presentation Complete
AMLIIoT Architecture for Sustainable, Scalable, and Realtime Microgrid Systems Control and Coordination Presented to the Graduate Training for Sustainable Energy Development 2022. This study to presented a sustainable, scalable Architecture and Control Suite based on state-of-the-art smart edge intelligent systems for effectively coordinated real-time Microgrid and Distribution grid energy management. "AMLIIoT Architecture - Applied Machine Learning and the Industrial Internet of Things"

Awards and Honours

Finalist Award at Climate Smart Cities Challenge
Issued by UN Habitat and Viable Cities.
Issued Sep 2022
Activity: KasanaShare.
KasanaShare emerged as a finalist project and team at the Climate Smart Cities Challenge that required innovative products, services and or business models which can help build zero carbon, energy-efficient, affordable homes that can be developed and demonstrated in Makindye Ssabagabo by 2023. From nearly 200 applications from across 29 countries, 100 applications were shortlisted by expert assessors and from this 45 were selected where we happened to be among.
https://climatesmart.citieschallenge.org/finalists/

Case challenge Winner with Audience Choice Award
Issued by World Bank Group.
Issued Jun 2022
Activity: World Bank Group Youth Summit Case Challenge.
My team and I emerged as finalists in the 2022 World Bank Group Youth Summit Regional Event "The Power of Youth in Fighting Climate Change: Voices from East Asia and the Pacific and Beyond" and won the competition with Audience Choice Award on June 21st, 2022.
https://www.worldbank.org/en/events/2022/01/19/world-bank-group-youth-summit-2022-unlocking-the-power-of-inclusion-for-equitable-growth#3

Finalist of Innovate2030 - SDG 11 Program
Issued by United Nations Framework Convention on Climate Change.
Issued May 2022
Activity: KasanaShare.
I led my team of seven members at the Innovate2030 - SDG 11 Digital Natives co-organized by the United Nations Framework Convention on Climate Change, UNFCCC and ekipa GmbH in Germany. Participating in Transformative climate Actions category, we emerged as one of the final teams out of more than 900 participants. Out of the 200 teams, our solution was validated as creative and innovative in driving cities and communities in Europe. We were featured on the UNFCCC website on the Top 5 green technologies they love.
https://unfccc.int/blog/5-green-tech-projects-we-love
https://app.ekipa.de/challenges/sdg11-co2reduction/finalists

Millennium Fellow
Issued by United Nations Academic Impact and Millennium Campus Network
Issued Sep 2021
Activity: Project CliviScope.
I was selected to be part of the Millennium Fellowship class of 2021 joining a team of 2000+ young leaders from across 136 campuses worldwide. My fellowship project CliviScope worked towards addressing climate change through Artificial Intelligence (AI) and Machine Learning (ML) to ensure resilience and effectiveness of climate mitigation actions for the long run efficiency.
https://www.millenniumfellows.org/fellow/2021/brac/aaron-masuba
https://sites.google.com/view/millenniumfellowbracu/the-projects/clivi-scope

2nd Runner up IBM Call for Code AI Spot Challenge
Issued by IBM Corporation.
Issued August 2021
Activity: Project Lungenia.
I emerged as a 2nd runner up in the IBM Call for Code AI Spot Challenge taking a prize of USD 2500. My innovation encompassed the use of IoT and Machine Learning to build and AI-powered solution for workforce protection in hazardous environments.
https://community.ibm.com/community/user/datascience/blogs/julianna-delua/2021/08/24/and-call-for-code-ai-spot-challenge-grand-prize-go