

Md Sabbir Hossen

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Cyberjaya, Selangor - 63000, Malaysia

OBJECTIVE

Motivated researcher specializing in Artificial Intelligence, Sustainable Technology, and Smart Energy Systems, with a strong focus on AI-OCPP integration for intelligent EV charging networks. Seeking opportunities to contribute to innovative green-energy projects, combining machine learning, data analytics, and real-world system design to advance sustainable smart-city ecosystems.

EXPERIENCE

- Multimedia University (MMU), Malaysia**  Dec 2024 – Present
Postgraduate Researcher — AI & Sustainable Technology Cyberjaya, Malaysia
 - Conducting advanced research on AI-driven Open Charge Point Protocol (OCPP) integration for secure and efficient EV charging management.
 - Designed and implemented tariff-aware reinforcement learning (RL) models and AI forecasting algorithms (Prophet, XGBoost, LSTM, GRU) for load management in smart grids.
 - Published multiple Q1 and Scopus-indexed journal papers, including in World Electric Vehicle Journal and Urban Science. Under Review multiple Q1 and Scopus-indexed journal papers in IEEE Transactions on Transportation Electrification, Results in Engineering, IEEE Access and Springer Nature.
 - Developed a multi-station OCPP simulation environment using Python, Colab, and real-world datasets to evaluate PPO, GA, and rule-based scheduling methods.
 - Collaborated with supervisors Prof. Dr. Gobbi Ramasamy and Dr. Ngu Eng Eng on expanding AI-OCPP models for federated learning, grid safety, and carbon-aware optimization.
- Freelance / Upwork (Top-Rated Plus Professional)**  2011 - Present
Freelance / Upwork (Top-Rated Plus Professional) Remote
 - Completed 222+ global projects in website development, AI integration, and digital strategy, maintaining a 5-star reputation and strong repeat-client base.
 - Specialized in Shopify, WordPress, Wix, and custom web automation for startups, research platforms, and eco-businesses.
 - Designed and deployed data-driven applications and IoT-linked dashboards using Python, PHP, and cloud-based analytics.
 - Provided SEO and digital growth consultancy for sustainable tech brands, helping businesses increase visibility and performance by over 90%.
 - Integrated AI-based customer insights and predictive analytics to support green and ethical e-commerce models.

EDUCATION

- Multimedia University (MMU)** Dec 2024 - Ongoing
Master of Engineering Science (By Research) Cyberjaya, Malaysia
- North Western University** 2022
Bachelor of Science in Computer Science and Engineering Khulna, Bangladesh
- Jashore Polytechnic Institute** 2013
Diploma in Computer Science Jashore, Bangladesh

PROJECTS

- AI-Driven OCPP Framework for Smart EV Charging Networks** Jul 2025
Tools: Python, TensorFlow, Colab, OCPP 1.6/2.0.1, Matplotlib 
 - Designed and implemented an AI-driven OCPP framework integrating reinforcement learning (PPO, Q-learning) for intelligent EV load management.
 - Created a multi-station control simulation for six 22 kW EVSEs with an 80 kW feeder cap using real charging data from Malaysia.
 - Achieved 25–40% reduction in peak load and 30% lower energy cost compared to baseline algorithms.
 - Published findings in World Electric Vehicle Journal (2025) and presented at international conferences.
- Federated AI-OCPP Network for City-Scale EV Management** Sept. 2025
Tools: Federated Learning, Secure Aggregation, Edge AI, OCPP 2.0.1 
 - Developed a federated learning system allowing multiple EV charging stations to learn collaboratively without sharing raw data.
 - Improved scalability, privacy, and cyber resilience in distributed OCPP-based networks.
 - Published in Urban Science (2025) — “Federated AI-OCPP Framework for Secure and Scalable EV Charging in Smart Cities.”

- [J.1] Hossen, M. S.; Sarker, M. T.; Al Qwaid, M.; Ramasamy, G.; Eng Eng, N. *AI-Driven Framework for Secure and Efficient Load Management in Multi-Station EV Charging Networks*. *World Electric Vehicle Journal*, vol. 16, no. 7, p. 370, 2025. DOI: [10.3390/wevj16070370](https://doi.org/10.3390/wevj16070370).
- [J.2] Hossen, M. S.; Sarker, M. T.; Nabi, M. S.; Bannah, H.; Ramasamy, G.; Eng Eng, N. *Federated AI-OCPP Framework for Secure and Scalable EV Charging in Smart Cities*. *Urban Science*, vol. 9, p. 363, 2025. DOI: [10.3390/urbansci9090363](https://doi.org/10.3390/urbansci9090363).
- [J.3] Sarker, M. T.; Al Qwaid, M.; Hossen, M. S.; Ramasamy, G. *Performance Optimization of Grounding System for Multi-Voltage Electrical Installation*. *Applied Sciences*, 2025, 15, 8600. <https://doi.org/10.3390/app15158600>.
- [S.4] Hossen, M. S.; Ramasamy, G.; Eng Eng, N. *Artificial Intelligence for Sustainable EV Charging: Integrated Forecasting, Anomaly Detection, and Scheduling in Smart Grids Under Review* (Results in Engineering).
- [S.5] Hossen, M. S.; Ramasamy, G.; Eng Eng, N. *OCPP-Integrated AI for City-Scale EV Charging: Forecasting, Fair Scheduling, and Anomaly Detection under Urban Tariffs Under Review* (Results in Engineering).
- [S.6] Hossen, M. S.; Ramasamy, G.; Eng Eng, N. *Transportation-Centric EV Charging with OCPP: Forecasting, Safe Scheduling, and Cost Optimization Under Review* (IEEE Transactions on Transportation Electrification).
- [S.7] Hossen, M. S.; Ramasamy, G.; Eng Eng, N. *Real-World Tariff-Aware Safe Reinforcement Learning for Grid-Stable OCPP EV Charging Networks Under Review* (IEEE Access).
- [S.8] Hossen, M. S.; Ramasamy, G.; Eng Eng, N. *AI-OCPP Framework for Smart and Safe EV Charging: Real-World Performance Evaluation Under Review* (IEEE Access).
- [C.9] Hossen, M. S.; Ramasamy, G.; Eng Eng, N.; Sarker, M. T. *Integration of AI-Driven Systems with Open Charge Point Protocol (OCPP) for Enhanced Electric Vehicle Charging Management* Manuscript Accepted (IEEE Xplore).
- [T.10] Hossen, M. S. *Integration of AI-Driven Systems with OCPP for Enhanced EV Charging Management*. Master of Engineering Science Thesis (By Research), Multimedia University (MMU), Malaysia, Submitted.

Selected Preprints:

- Hossen, M. S. *Artificial Intelligence for Sustainable EV Charging: Integrated Forecasting, Anomaly Detection, and Scheduling in Smart Grids*. SSRN preprint ID: [5432752](https://ssrn.com/abstract=5432752).
- Hossen, M. S. *OCPP-Integrated AI for City-Scale EV Charging: Forecasting, Fair Scheduling, and Anomaly Detection under Urban Tariffs*. SSRN preprint ID: [5598272](https://ssrn.com/abstract=5598272).

SKILLS

- **Programming Languages:** Python, MATLAB, JavaScript, PHP, C++, SQL
- **Artificial Intelligence & Machine Learning:** Reinforcement Learning (PPO, Q-Learning), Deep Learning (LSTM, GRU, CNN), Predictive Analytics, Federated Learning, Anomaly Detection, Model Optimization
- **Data Science & Forecasting:** Prophet, XGBoost, TensorFlow, Pandas, NumPy, Scikit-Learn, Matplotlib, Statistical Modelling, Time-Series Forecasting
- **Smart Grid & Sustainable Systems:** OCPP 1.6/2.0.1 Integration, Tariff-Aware Scheduling, Load Balancing, Energy Optimization, Digital Twin Systems, IoT Sensor Networks
- **Web & Application Development:** Shopify, WordPress, Wix, Squarespace, API Integration, Front-End (HTML, CSS, JS), Back-End (PHP, Node.js), Responsive Design, SEO Optimization
- **Database & Cloud Technologies:** MySQL, Firebase, Google Cloud Platform (GCP), AWS, MongoDB, Cloud Storage & Data Pipelines
- **Research & Analytical Tools:** LaTeX, Google Colab, MATLAB Simulink, Jupyter Notebook, SPSS, Power BI, GitHub, Zotero
- **Soft Skills:** Academic Writing, Research Presentation, Leadership, Collaboration, Technical Communication, Project Management

HONORS AND AWARDS

- **Silver Medal – iNVENTX Exhibition** 2025
Multimedia University (MMU), Malaysia
Awarded the **Silver Medal** at the iNVENTX 2025 Innovation Exhibition for outstanding research innovation on *AI-Driven EV Charging Framework for Sustainable Smart Cities*. This recognition highlights excellence in applying artificial intelligence to real-world green energy solutions and advancing Malaysia's smart mobility goals.
- **Postgraduate Research Excellence Award** 2025
Faculty of Engineering and Technology, MMU, Malaysia
Awarded for outstanding research contribution on *AI-OCPP Framework for Secure and Efficient Load Management*, demonstrating innovation and strong analytical methodology in sustainable energy systems.

- **Certificate of Presentation – Digital Futures International Congress (DIFCON 2025)** 2025
Multimedia University (MMU), Malaysia
Presented the research paper titled *Integration of AI-Driven Systems with Open Charge Point Protocol (OCPP) for Enhanced Electric Vehicle Charging Management* at the 6th Multimedia University Engineering Conference (MECON 2025) in conjunction with DIFCON 2025, showcasing significant advances in AI-enabled sustainable energy systems.
- **3 Minute Thesis (3MT) Competition – Certificate of Participation** 2025
Institute for Postgraduate Studies (IPS), Multimedia University, Malaysia
Recognized for presenting research in the *3 Minute Thesis Competition 2025*, effectively communicating complex AI-OCPP research concepts to a broad academic audience.
- **Top-Rated Plus Professional on Upwork** 2023
Upwork Global Platform
Achieved Top-Rated status with over 222+ completed global projects in software development, AI integration, and sustainable technology solutions, maintaining a 5-star client satisfaction record.
- **Google AdWords Certification** 2014
Google Inc.
Certified in managing and optimizing Google AdWords campaigns, focusing on keyword strategy, campaign analytics, and ROI-based marketing.
- **Google Analytics Certification** 2014
Google Inc.
Certified in data analysis and web performance tracking through Google Analytics, emphasizing data-driven decision-making and conversion optimization.
- **Google Search Console Certification** 2014
Google Inc.
Certified in search engine performance monitoring, indexing optimization, and SEO strategy implementation using Google Search Console tools.

LEADERSHIP EXPERIENCE

- **Research Team Leader – AI-OCPP Smart Charging Project** 2024 – Present
Faculty of Engineering and Technology, Multimedia University (MMU), Malaysia
Lead a multi-disciplinary team focused on developing *AI-Driven OCPP Frameworks* for secure, efficient, and scalable EV charging systems. Supervised the design and testing of reinforcement learning models for load forecasting and grid-safe scheduling using real-world datasets.
- **Session Chair and Presenter – DIFCON 2025 (MECON)** 2025
Digital Futures International Congress, Multimedia University, Malaysia
Served as session chair and paper presenter during the 6th MMU Engineering Conference (MECON 2025). Facilitated discussions on the integration of AI and OCPP in sustainable smart grid systems and contributed to the collaborative academy.
- **Founder and Lead Developer – WEBBIRS** 2011 – Present
Freelance Global Platform (Upwork)
Founded and managed a digital development initiative delivering web-based, AI-integrated, and data-driven solutions to clients across more than 20 countries. Mentored junior developers and promoted sustainable design principles through technology projects.

PROFESSIONAL MEMBERSHIPS

- **Institute of Electrical and Electronics Engineers (IEEE)** 2024 – Present
Membership ID: 101520449
Active member of the IEEE community, contributing to research in artificial intelligence, smart grids, and electric vehicle technologies. Engaged in technical activities under the IEEE Power and Energy Society and IEEE Smart Cities initiative.
- **Elsevier Reviewer Community** 2025 – Present
Elsevier Journals in Energy and Smart Systems
Served as peer reviewer for academic manuscripts focused on AI integration, energy optimization, and sustainable technology. Contributed to maintaining the quality and integrity of scientific publications.
- **Google Developers Group (GDG)** 2016 – Present
Community Contributor and Workshop Participant
Participated in AI and cloud development workshops, promoting responsible AI deployment and sustainable software engineering practices.
- **OpenAI Research Network** 2025 – Present
Collaborative AI Research Member
Involved in exploring advanced reinforcement learning and intelligent control algorithms for future applications in smart grid systems and mobility solutions.

CERTIFICATIONS

◦ IEEE Author Education Certificate <i>Institute of Electrical and Electronics Engineers (IEEE)</i> Completed IEEE Author Education course covering best practices in academic writing, ethical publishing, and manuscript preparation.	2024
◦ Python Programming for Data and AI Applications <i>Faculty of AI and Engineering, MMU, Malaysia</i> Completed professional certification on Python programming focused on data processing, visualization, and AI algorithm implementation for research environments.	2025
◦ Research Methodology for Postgraduate Studies <i>Institute for Postgraduate Studies (IPS), MMU, Malaysia</i> Trained in advanced research design, hypothesis formulation, literature review strategies, and academic writing techniques for high-impact publications.	2025
◦ Entrepreneurship and Commercialization of Research Innovations <i>Multimedia University (MMU), Malaysia</i> Completed professional training on transforming academic research into viable commercial products, focusing on innovation management and sustainable business development.	2025
◦ Second-Life Battery Technology and Sustainable Energy Storage <i>Faculty of AI and Engineering, MMU, Malaysia</i> Certified in the principles and practical applications of second-life lithium-ion battery systems, emphasizing AI-driven digital twin modeling and circular economy practices.	2025
◦ Google AdWords Certification <i>Google Inc.</i> Certified in online advertising and keyword optimization strategies, focusing on analytics-driven marketing and campaign performance.	2014
◦ Google Analytics Certification <i>Google Inc.</i> Certified in web performance tracking, data visualization, and user behavior analysis for data-driven decision-making.	2014
◦ Google Search Console Certification <i>Google Inc.</i> Certified in SEO monitoring, indexing management, and web visibility optimization techniques.	2014

ADDITIONAL INFORMATION

Languages:

- **English:** Professional proficiency in academic writing, presentation, and communication.
- **Bengali:** Native language with strong written and verbal fluency.

Interests:

- Artificial Intelligence for Smart Energy Systems
- Electric Vehicle Charging Optimization
- Digital Twin and Second-Life Battery Technologies
- Sustainable Smart City Development
- Data Science and Predictive Analytics
- Academic Mentorship and Research Communication

REFERENCES

1. **Prof. Dr. Gobbi Ramasamy**
Dean and Professor, Faculty of Engineering and Technology
Multimedia University (MMU), Malaysia
Email: gobbi@mmu.edu.my
Relationship: Principal Research Supervisor
2. **Dr. Ngu Eng Eng**
Senior Lecturer, Faculty of Engineering and Technology
Multimedia University (MMU), Malaysia
Email: eengu@mmu.edu.my
Relationship: Co-Supervisor and Research Collaborator