**Md Masum Billah,** Ph.D., P.Tech.

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LinkedIn: [LinkedIn Profile](https://www.linkedin.com/in/md-masum-billah-ph-d-p-tech-52319b195), Google Scholar: [Google Scholar Profile](https://scholar.google.com/citations?user=Gqzm7XAAAAAJ&hl=en)

Experienced Robotics and Electromechanical Integration Engineer with over 12 years of expertise in research, development, and system integration of advanced robotic platforms. Adept in designing, prototyping, and validating complex electromechanical systems, particularly in regulated environments such as medical devices and rehabilitation robotics. Skilled in ROS, C++, MATLAB, SolidWorks, and cross-functional collaboration. Passionate about building next-generation robotics technologies to improve human lives.

**Education**

* **Ph.D. in Engineering (Robotics & Control), 2016**International Islamic University Malaysia
* **M.Sc. in Mechatronics Engineering, 2011**International Islamic University Malaysia

**Experience**

March 2020 – Present

***Robotics Engineer*** • Cambridge Robotics • Cambridge, MA

* Lead system-level integration and troubleshooting of robotic platforms used for rehabilitation and industrial automation.
* Designed and built electro-mechanical robotic arm systems from concept to verification testing using ROS, C++, and MATLAB.
* Maintained and upgraded existing robotic fleets for R&D; developed and released test reports via ECO processes.
* Collaborated with mechanical and electrical engineers to resolve complex cross-disciplinary issues.
* Led BOM management, procurement activities, and inventory configuration control.

December 2018 – February 2020

***Assistant Professor*** • University of Kuala Lumpur, British Malaysian Institute • Malaysia

* Taught courses in robotics, automation, and control systems; supervised research in robotic exoskeletons and IoT.
* Published research in electromechanical and assistive robotics systems.
* Contributed to design transfer efforts for academic-industrial prototype collaborations.

December 2017 – November 2018

***Postdoctoral Researcher*** • University of Kuala Lumpur • Malaysia

* Designed upper-limb assistive devices and integrated real-time sensor systems.
* Led troubleshooting and verification testing in a regulated academic lab environment.
* Collaborated with multi-disciplinary teams to enhance robotic efficiency and usability.

March 2017 – August 2017

***Researcher*** • University of Missouri-Kansas City • MO

* Conducted research on assistive devices for visually impaired individuals.
* Published findings in international journals and conferences.

March 2016 – March 2017

***Post-Doctoral Fellow*** • International Islamic University Malaysia • KL

* Conducted research on assistive devices for visually impaired individuals.
* Published findings in international journals and conferences.

March 2017 – August 2017

***Researcher*** • University of Missouri-Kansas City • MO

* Conducted research on assistive devices for visually impaired individuals.
* Published findings in international journals and conferences.

**Technical Skills**

* **Programming Languages**: Python, Java, C/C++, JavaScript, React.js, Node.js, HTML5, CSS3
* **Robotic/Embedded Systems**: Robot Operating System (ROS), MATLAB, Simulink
* **Machine Learning**: Apache Mahout™, MLlib
* **DBMS**: PostgreSQL, MongoDB, MySQL
* **3D Design Tools**: AutoCAD, SolidWorks
* **Version Control**: Git
* **App Development**: Full-Stack Development, Agile Methodologies
* **PCB/Circuit Design**: Eagle, KiCad, Cadence

**Academic Awards and Patents**

* **Gold Medal**, “Automatic Leveling Wheelchair,” Malaysia Technology Expo (MTE) 2019
* **Patent Filed**, “An Automated Horizontal Posture Mobility Apparatus,” IP NO: PI2019001977 (2019)
* **Malaysia International Scholarship (MIS)**, Ministry of Higher Education (2016-2017)

**Selected Publications**

* Billah, M. M., Yusof, Z. M., et al. “Sensory Substitution for Visual Impairments: A Technological Review,” *Visual Impairment and Blindness*. IntechOpen, 2019.
* Billah, M. M., Kadir, K., et al. “Experimental Investigation of a Novel Walking Stick in Avoidance Drop-Off for Visually Impaired People,” *Cogent Engineering* (Scopus Q2), 2019.
* Ahmed, M., & Billah, M. M. “Smart Material-Actuated Flexible Tendon-Based Snake Robot,” *International Journal of Advanced Robotic Systems* (ISI/Scopus Q3), 2018.

**Professional Memberships**

* Member, **IEEE Instrumentation & Measurement Society** (IMS)
* Professional Technologist, **Malaysia Board of Technologists (MBOT)**

**Community Engagement**

* **Publication Chair**, IEEE 6th International Conference on Smart Instrumentation, Measurement and Applications (ICSIMA 2019)
* **Guest Instructor**, Java Programming Language Training Program, IIUM, Malaysia (2012)
* **Workshop Organizer**, Thesis Writing Workshop, IIUM, Malaysia (2013)

**References**

Available upon request.