



Khairul E. Fahim

B.Sc in Electrical and Electronic Engg.
M.Tech in Systems and Control Engg.

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Nationality: Bangladeshi
DOB: 07/05/1992

EDUCATION

Examination	Board / Country	Institute	Year	CPI/CGPA
Masters Specialization: Control & Computing Systems	India	Indian Institute of Technology Bombay (IIT Bombay)	2018	7 (out of 10)
Bachelors Degree : Electrical and Electronic Major: Computer and Electronics	Bangladesh	BRAC University	2014	3.04 (out of 4.00)
HSC	Dhaka Board	Notre Dame College, Dhaka	2009	5.00 (out of 5.00)
SSC	Dhaka Board	Civil Aviation High School, Dhaka	2007	5.00 (out of 5.00)

SCHOLASTIC ACHIEVEMENTS

- **SSC Scholarship** from Board of Intermediate and Secondary Education, Dhaka, Bangladesh (For the academic session 2008-2009)
- **Vice Chancellors Award**, Fall semester 2013, BRAC University
- **Indian Council for Cultural Relations Scholarship**, India (India Scholarship (Bangladesh) Scheme for the academic session 2016-2018)
- **2nd Position, Teaching Competition**, East China University of Technology, China, 2019

KEY ACADEMIC PROJECTS AND SEMINARS

MASTER'S PROJECT: (Supervisor: Prof. Dr. Bijnan Bandyopadhyay, IIT Bombay, India) [July, 17- June 18]

Topic: Design and Comparative Analysis Solar Charge Controllers Using Higher Order Sliding Mode Control

- Implementation of pulse width modulation (PWM) based sliding mode controller for power converters.
- Selecting proper ground motions for the analysis of the structure.
- Designed processes for low cost voltage conversion application.
- Developing state space modelling of the power converters in terms of desired control variables.
- Proposed a maximum power point tracking algorithm for providing faster convergence under environmental variations.

MASTER'S SEMINAR: (Supervisor: Prof. Dr. Bijnan Bandyopadhyay, IIT Bombay, India) [July-Nov, 16]

Topic: Design and Control of the Stewart Platform Robot

- Presented design and control of a Stewart platform based on a six independently prismatic actuators.
- Proposed probable improvement in design process.

UNDERGRADUATE PROJECT: (Supervisor: Prof. Dr. Mosaddequr Rahman, BRAC University Bangladesh) [Jan-April, 14]

Topic: Solar Power Light Weight Vehicle for Dhaka City Dwellers.

- Construct an efficient solar car, for the daily office commuters of Dhaka city so that they can travel a fixed distance that they need to commute everyday on a reliable and economical car that essentially runs on free renewable solar energy.
- Surveyed relevant data from traffic division
- Analyzed the problem associated with proposed plan of the car.

COURSE PROJECTS:

I. Topic : Firebird wheeled robot control (Course name: Wheeled mobile robotics, IIT Bombay, India) [July-Oct,16]

- Developed codes in MATLAB to analyze and control firebird robot.
- Got introduced to Kalman filter concept.

II. Topic: Control of robot arm manipulator (Course name: Systems and Control laboratory, IIT Bombay) [Jan-Apr, 17]

- Developed control algorithm and codes for quartas robotic arm manipulator.
- Prepared technical report in Latex.

III. Topic: Demo solar micro grid (Course name: Energy Policy and Planning, Instructor: Prof. Dr. Anand B. Rao, IIT Bombay, India) [Jan-Apr, 17]

- Designed a demo solar micro grid on homer software depending on the consumer requirement.
- Visited remote villages and collected user data for better understanding.

IV. DC motor control (Course name: Automation and feedback control, Instructor: Prof. Dr. PSV Nataraj, IIT Bombay) [July-Nov,16]

- DC motor control using different methods like PID, Zeiglar Nichols e.t.c.
- Did a comparative analysis.

PUBLICATION

❖ Journal Paper

- Khairul Eahsun Fahim, Monzurul Karim, “Solar Power Light Weight Vehicle for City Dwellers” International Journal of Engineering Research & Technology (IJERT) - Vol. 7 Issue 02, February-2018, Pages 140-145.
- Khairul Eahsun Fahim, Md Sakib Hossain, Monzurul Karim Afgani, Shaikh Mohammad Farabi, Soad Shajid, “Modelling and Simulation of DC-DC Boost Converter using Sliding Mode Control” International Journal on Recent Technology and Engineering (IJRTE)- Vol.9 Issue 02, July 2020, Pages 674-678.

❖ Conference Paper

- Shaikh Mohammad Farabi, Khairul Eahsun Fahim, “Orchestration of a PID Controller Mechanism for Vertical and Horizontal Elasticity” IEICE Tech. Rep., vol. 119, no. 291, IA2019-32, pp. 47-53, Nov. 2019
- Esrat Jahan Esha, Khairul Eahsun Fahim, Shaikh M Farabi, “Artificial Intelligent Management System for solar PV projects in Bangladesh, 1st National Workshop on Big Data and Machine Learning, Chittagong University of Engineering and Technology, December 2020
- Khairul Eahsun Fahim, Shaikh M Farabi, “Overview of maximum point technique for solar PV” (accepted), 7th International Conference on Renewable Energy Technologies, Kuala Lumpur, Malaysia, 2021

WORK EXPERIENCE

- ❖ **Lecturer, Electronic Information Engineering, East China University of Technology. Sep 2018 to June 2021**
 - Teaching courses related to computer science
 - Supervising undergraduate research projects on renewable energy, machine learning and data science
- ❖ **Engineer, System operation center & IT, Bkash LTD. April 2016 to July, 2016**
 - Ensured smooth technical operations and first level support.
 - Performed Service Operation Center (SOC) related activities.
 - Maintained SOC SPOC with third parties, external parties and vendors.
- ❖ **System Support Engineer, IT, Thakral information systems LTD, Feb 2015 to March 2016**
 - Determined required algorithms for all automate systems and provide technical support to all production systems and prepare an efficient schedule for same.
 - Installed all internal resources and analyze all software to ensure smooth working
 - Manage vendors and external clients
- ❖ **System Engineer, Bangla Tel LTD, Network Operations, Sep 2014 to Feb 2015**
 - 24/7 Network & Service Surveillance and Alarm escalation to international team
 - Troubleshooting experience about VOIP, SIP protocol via Signaling analysis
- ❖ **Intern Engineer, Robi Axiata LTD, Central operation and IT, Jun 2014 to Sep 2014**
 - Data Analysis and reporting using advanced excel, Python, Tableau
 - Ensured terminal based 1st line fault handling for radio, core transport and service network
 - Escalated follow up and report alarms

SKILL SET

RELEVANT COURSES ATTENDED:

- Automation and Feedback Control
- Sytems Theory
- Systems Modelling and Identification
- Optimization
- Wheeled Mobile Robotics
- Energy Policy and Planning
- Probability
- Biomedical fundamentals
- Control of Non Linear Dynamical Systems

SOFTWARE PROFICIENCY:

- **MATLAB** : Coding for power converter applications.
- **Simulink** : Familiar with different libraries.
- **Proteus** : Simulation for different electronic circuits
- **MySQL** : Good knowledge on database programming
- **Microsoft Office** : Advanced working proficiency.
- **Google Colab, Jupyter** : Advanced working proficiency..

TRAININGS:

- **Python and Machine Learning workshop** : Attended python and machine learning workshop conducted by IIT Bombay.

EXTRA-CURRICULAR ACTIVITIES

- Completed one year mandarin **Chinese** course from IIT Bombay organized by **National Tsing Hua University**
- Worked as a Chinese language interpreter in **Taiwan education expo**, Mumbai
- Member, Institue of Engineers, Bangladesh
- Finalist, Sheltech Channel I Campus Hero-First campus based reality show on social development, 2010
- Top 20 Award, Surf Excel Nationwide painting Carnival, 2005
- Finisher of IITB Monsoon run,2016 and Fitizen half marathon,2017
- Worked as a convocation volunteer at 55th annual convocation of IIT Bombay

LANGUAGE TEST SCORE

IELTS: Overall band 7 (British Council)

REFERENCE

Supriya Shafkat Ahmed

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Prof. B. Bandyopadhyay

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Indian Institute of Technology, Mumbai, India
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