

## RESUME

### **Ms. Angana Saikia**

Research Scholar

Department of Biomedical Engineering, School of Technology  
North-Eastern Hill University, Shillong-793022, Meghalaya, India

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### **Area of Area of Interest:**

Biomedical Signal Processing, Biomedical Signal Acquisition, Electrophysiology,  
Neurophysiology, Machine Learning, Instrumentation, Rehabilitation(Upper Limb Prosthetic).

### **Software Knowledge:**

Matlab, Origin, P-Spice, AD instruments (Lab View), Arduino UNO programming

### **Academic Qualifications:**

<b>DEGREE</b>	<b>BRANCH</b>	<b>UNIVERSITY/ BOARD</b>	<b>YEAR</b>
PhD (Pursuing)	Biomedical Engineering	North-Eastern Hill University(NEHU), Shillong,	Registration no: 2017 of 17.08.2016
M-Tech	Electronics and Communication (Bioelectronics)	Tezpur Central University	2014
BE	Applied Electronics and Instrumentation	Guwahati University	2011
12th	Science	CBSE	2006
10th		CBSE	2004

**Professional Experience:**

Sl.no	Designation	Institute	Department	Period
1	Research Associate-I (DST,IMPRINT-2 Sponsored Project entitled," Design of cost-effective Mobile and Web application for detection of Parkinson's Disease").	North-Eastern Hill University, Shillong.	Biomedical Engineering	May 2019-present
2	Junior Research Fellow (DBT Sponsored Project entitled, " Design of Artificial Hand with Artificial Finger" , BT/532/NE/TBP/2013)	North- Eastern Hill University, Shillong.	Biomedical Engineering	November 2014 to July 2016
3	Senior Research Fellow (DBT Sponsored Project entitled, " Design of Artificial Hand with Artificial Finger" , BT/532/NE/TBP/2013)	North -Eastern Hill University, Shillong	Biomedical Engineering	August 2016 to July 2017
4	Lecturer	Institute of Electronics and Telecommunication Engineers, Guwahati	Electronics and Telecommunication Engineering	August 2011 to July 2012

**Achievements:**

- 1) Young Scientist Travel Grant** award by Department of Science and Technology (DST), GOI to attend International Conference (Society for Neuroscience, 2017) in Washington DC, USA, November 11-15, 2017.
- 2) IBRO Travel Grant** to attend IBRO-APRC Associate School on Electrophysiological Enlightenment of System Neuroscience, Nepalese Army Institute of Health Sciences, Kathmandu, Nepal, May 8-12, 2018.

**3) Young Scientist Travel Grant** award by Council for Scientific and Industrial Research, Human Resource Development Group (CSIR), GOI to attend International Conference (Society for Neuroscience, 2018) in San Diego, USA, November 3-7, 2018.

**4) CSIR direct Research Associateship** award, 2019.

**Professional Membership:**

- 1) Student member for Society for Neuroscience. (ID No. 210947047)
- 2) Student member of International Society for Neurochemistry, India (ID No. 23793)
- 3) Student member of Asia Pacific Society for Neurochemistry. (ID No. 17-3-IND-S20).

**Publications:**

**BOOK:**

- 1) **Angana Saikia**, Sudip Paul, M. Hussain. Overview of Parkinson's disease and its Relevance. Lambert Academic Publishing, Germany. Year: 2018. (ISBN 978-613-3-99599-4).

**BOOK CHAPTER:**

- 1) **Angana Saikia**, Masaraf Hussain, Sudip Paul. Trends Experimental BIOLOGY. Volume 3. Effect of dopamine in Parkinson's disease. Excel India Publication.
- 2) **Angana Saikia**, Vinayak Majhi, Masaraf Hussain, Sudip Paul. Tremor identification using machine learning in Parkinson's disease. Early Detection of Neurological Disorders using Machine Learning Systems. IGI Global. doi: 10.4018/978-1-5225-8567-1.ch008.
- 3) **Angana Saikia**, Sudip Paul. EEG signal Processing and its classification for Rehabilitation device control. Biomedical Engineering and its Applications in Healthcare, Springer Nature. (Submitted, 2018).

**JOURNAL PAPER:**

- 1) **Angana Saikia**, Nayan M. Kakoty, Nabasmita Phukan, Malarvili Balakrishnan, Nitin Sahai, Sudip Paul, and Dinesh Bhatia. Combination of EMG Features and Stability Index for Finger Movements Recognition. Procedia Computer Science. Elsevier.133 (2018): 92-98.
- 2) **Angana Saikia**, Pallab Bhattacharya, Sudip Paul. Importance of Dopamine in Parkinson's disease. Advances in Tissue Engineering and Regenerative Medicine. MedCrave.2018; 4(3):454 455. doi:10.15406/atroa.2018.04.00077.
- 3) **Angana Saikia**, Masaraf Hussain, Amrit Ranjan Barua, Sudip Paul, (2018) Detection of Parkinson's Disease Using Clinical Diagnostic Tools. J Neurol Disord Stroke 6(2): 1143.

- 4) **Angana Saikia**, Sudip Paul, Vinay Kumar Pandey. Prevalence of Parkinson's disease in India: A Review. Journal of Biomedical Engineering Research and Review. 2017. (E-ISSN: 2349-3232)
- 5) Punit Kumar Rohilla, Suresh Verma, Dinesh Bhatia, Nitin Sahai, Sudip Paul, **Angana Saikia**, Sushmi Mazumdar. Material Selection for the Prosthetic Hand. International Journal of Biomedical Engineering.2017; 3(1).
- 6) **Angana Saikia**, Sushmi Mazumdar, Nitin Sahai, Dinesh Bhatia, Sudip Paul, Punit Kumar Rohilla, Suresh Verma. Recent advancements in prosthetic hand technology. Journal of medical engineering & technology, Taylor & Francis Group, 2016; 40(5):255-64.
- 7) Sushmi Mazumdar, **Angana Saikia**, Nitin Sahai and Sudip Paul. Below Elbow Prosthetic: A Path to Independent Era. International Journal of Advanced Information Science and Technology (IJAIST), 2015; 34(34).
- 8) **Angana Saikia**, Sushmi Mazumdar, Nitin Sahai, Sudip Paul, Dinesh Bhatia. Performance Analysis of Artificial Neural Network for Hand Movement Detection from EMG Signals. IETE Journal of Research. (Accepted)
- 9) **Angana Saikia**, Masaraf Hussain, Sudip Paul. EEG-EMG Correlation for Parkinson's disease. Biomedical Signal Processing and Control, Elsevier. (Under review, 2019)

#### **CONFERENCE PAPER:**

- 1) **Angana Saikia**, Masaraf Hussain, Amit Ranjan Barua, SudipPaul. Significance of Lyapunov Exponent in Parkinson's disease using Electroencephalography. In 2019 6th International Conference on Signal Processing and Integrated Networks (SPIN), pp. 791-795. IEEE, 2019.
- 2) **Angana Saikia**, Sudip Paul. Early detection of Parkinson's disease using bio signals. Science Communicator's Meet during 105th Indian Science Congress at Manipur University, Imphal, Manipur. March 16-20, 2018.
- 3) **Angana Saikia**, Sudip Paul. Detection of Dementia and Cognitive Impairment in elderly people with Parkinson's disease. Third Annual Meeting of Neuroscience Society of Nepal, Nepalese Army Institute of Health Sciences, Kathmandu, Nepal. May 12-13, 2018.
- 4) **Angana Saikia**, Sudip Paul. Early detection of Parkinson's disease using bio signals. Science Communicator's Meet during 105th Indian Science Congress at Manipur University, Imphal, Manipur. March 16-20, 2018.
- 5) **Angana Saikia**, Vinay Kumar Pandey, Sudip Paul, Masaraf Hussain, Amrit Ranjan Barua. Assessment of Parkinson's disease through Clinical and Demographic data. SFN 2018, San Diego, USA. November 3-7, 2018.

- 6) **Angana Saikia**, Sudip Paul, Vinay Kumar Pandey. Correlation between electroencephalogram and Electromyogram in Parkinson's disease: A Review. SFN Neuroscience 2017, Washington DC, USA. November 11-15, 2017.
- 7) Sudip Paul, **Angana Saikia**, Ranjana Patnaik. Neural modelling based classification of rat brain eeg signal during ischemic stroke condition. VII Congress of Federation of Indian Physiological Societies (FIPS) & XXIX Annual Conference of Physiological Society of India (PSI) Organized by Defence Institute of Physiology & Allied Sciences, DRDO, Delhi. November 5-7, 2017.
- 8) Sushmi Mazumdar, **Angana Saikia**, Nitin Sahai, Dinesh Bhatia, Sudip Paul. Comparative study and feature extraction of the muscle activity patterns in healthy subjects. InSignal Processing and Integrated Networks (SPIN), 2017 4th International Conference, Amity University, Delhi on 2017 Feb 2 (pp. 96-99). IEEE.
- 9) Vinay Kumar Pandey, **Angana Saikia**, Sudip Paul. Unique approach to control speech sensory and motor neuronal disorder through natural language processing and cognitive development: A Review. REGICON 2017, IIIT Manipur, November 3 -4, 2017.
- 10) **Angana Saikia**, Sushmi Mazumdar, Nitin Sahai, Dinesh Bhatia, Sudip Paul. Comparative study and feature extraction of the muscle activity patterns in healthy subjects. InSignal Processing and Integrated Networks (SPIN), 2016 3rd International Conference, Amity University, Delhi, on 2016 Feb 11 (pp. 147-151). IEEE.
- 11) **Angana Saikia**, Sushmi Mazumdar, Nitin Sahai, Dinesh Bhatia, Sudip Paul. Biomaterials in Prosthetic-A Review. International Conference on Biomaterials, Biodiagonistics, Tissue Engineering, drug delivery, And Regenerative Medicine (BITERM-2016),IIT Delhi, April 15-17, 2016.
- 12) **Angana Saikia**, Nitin Sahai, Finger movement recognition using neural network, 2nd International Conference on Bio Signals, Images and Instrumentation(ICBSII-2015),SSN College, Chennai, March 19-21,2015.
- 13) **Angana Saikia**, Sushmi Mazumdar, Nitin Sahai, Dinesh Bhatia,Sudip Paul. Brain computer interfaced controlled prosthetic hand using EMG signal. National Workshop and Conference on Advances in Computational Neurochemistry and Neurobiology (ACNN),NEHU, Shillong, December 16-21, 2015.
- 14) Nitin Sahai, Dinesh Bhatia, Sudip Paul, **Angana Saikia**. Muscle mechanics of upper limb involved in the designing of prosthetic hand with moving fingers. XXV Congress of the International Society of Biomechanics in Glasgow, July 12– 16, 2015.
- 15) Sushmi Mazumdar, **Angana Saikia**, Nitin Sahai, Sudip Paul, Dinesh Bhatia. Microcontrollers in Prosthetics: An Overview. National Conference on Recent Advances in Biomedical Engineering (NCRABME – 2015), NEHU, Shillong, August 28- 29, 2015.
- 16) Sudip Paul, Pallav Bhattacharya, **Angana Saikia**. Early Detection of Cerebral Stroke using Biosignal. 11<sup>th</sup> World Stroke Congress. Montreal, Canada, October 17-20, 2018.

**Conference/ Workshop/Training Organized and attended:**

- 1) IBRO-APRC Associate School on Electrophysiological Enlightenment of System Neuroscience, Nepalese Army Institute of Health Sciences, Kathmandu, Nepal, May 8-12, 2018 . (Attended)
- 2) Workshop on Brainwave Robotics, Electronics & ICT Academy, IIT Guwahati, Assam, March 26-28, 2018(Attended)
- 3) IBRO-APRC Associate School on Computational approaches in Neuroprotection and Neurorehabilitation, North-Eastern Hill University, Shillong, India, June 5-10, 2017. (Attended)
- 4) Short term course on Emerging Trends in Bio-Robotics for Development of Prosthetic and Orthotic Devices under GIAN Scheme of MHRD India, Department of Applied Mechanics, MNNIT Allahabad from December 19 -30, 2016. (Attended)
- 5) National Conference of Biomechanics and Rehabilitation Engineering (BIOREHAB 2016), 15th to 16th September, 2016 at Department of Biomedical Engineering, North Eastern Hill University, Shillong.(Organized)
- 6) National Conference on “Recent Advances in Biomedical Engineering” (NCRABME-2015) at Department of Biomedical Engineering, North Eastern Hill University, Shillong from August 28-29, 2015 (Organized)
- 7) 29th Annual Meeting of Society for Neurochemistry, India (SNCI) and National Workshop and Conference on “Advances in Computational Neurochemistry and Neurobiology” (SNCI-ACNN 2015) Organized by Department of Biomedical Engineering and Computer Centre North-Eastern Hill University from December16– 21, 2015(Attended)
- 8) Workshop on “Virtual Laboratory” conducted by the Department of Biomedical Engineering, North Eastern Hill University, Shillong, Meghalaya, India in collaboration with Indian Institute of Technology (IIT), Roorkee from October 30-31, 2015(Attended)

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