

Suvodip Chakraborty

Curriculum Vitæ (June 11, 2017)

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* Nov 29, 1992



Work experience

Sponsored research and industrial consultancy, IIT Kharagpur

- **Study on the effects of meditation on human mind and body.**

The experiment included almost 200 subjects who are Kriya Yoga practitioners with an average experience of 12 years. Meditation on Human Mind and Body which incorporated finding the changes in the signatures of saccades through EOG. Electroencephalograph signals obtained and also analyzed according to different frequency bands to find the condition of the mind to study the effect of short term meditation on cognitive performance of an individual. A database of almost 200 participants were created.

- **Development of smart sensors which can monitor the alertness levels of an individual**

Contact based method is incorporated for detection and estimation of fatigue using various physiological signals like Respiration Rate, Heart Rate, oxygen saturation, EEG, EOG etc.. The system is then capable of calculating the fatigue levels of an individual from the acquired signals.

- **Development of an integrated alertness assessment system for aircraft pilots for a go/no-go assessment**

Contact based EOG sensors are incorporated in a spectacles, which along with a psychomotor vigilance test gives a measure of the alertness levels of an individual within 3 minutes. This method utilizes the data from both biosignal amplifier and reaction time to decide if a person is fatigued beyond a certain threshold.

- **Development of Interconnected grid of**

smart hygiene monitor

Estimation of concentration of gaseous particles for classification of air quality is implemented on a resource constrained environment. The individual units are interconnected using IoT and the data from each units are streamed to a local server.

- **Development of a Wireless Eye Wear for Continuous Monitoring of the Vigilance Level of Automotive Driver**

Vigilance level of automotive drivers are accessed in real-time using a biosignal amplifier and transmitter fixed on a spectacle frame. Alerts are generated when the driver becomes drowsy. These alerts are generated on an android smart phone which also acts as a computing platform.

- **Teaching Assistant in Embedded System and Control Course in summer 2017**

Demonstration of capabilities of small embedded system platforms in resource constraint environment has been discussed with possible demonstrations and class projects.

Railway locomotive
shed, Kharagpur, India

- **Summer internship (1st June, 2013- 31 July, 2013)**

The effects of fault on auto transformer and 3-phase transformer windings have been studied in the summer internship.

Indian Institute of Technology, Kharagpur, India

- **Motor operable remote controlled doors (1st June, 2012- 31 July, 2012).**

Stepper motor to operate a door and its locking mechanisms with multiple layer of verification has been developed.

Education

- 2015-Present **Master in Science(by Research)**, *Advanced Technology development centre*, IIT Kharagpur,INDIA.
- 2010-2014 **Bachelors in Electrical engineering**, *Electrical engineering department*, Dr. B.C. Roy Engineering College, Durgapur,India.
CGPA-8.26/10
- 2009-2010 **Higher secondary**, *Kendriya Vidyalaya*, IIT Kharagpur, India, IIT Kharagpur,INDIA.
Percentage-76.8%
- 2007-2008 **Secondary**, *Kendriya Vidyalaya*, IIT Kharagpur, India, IIT Kharagpur,INDIA.
Percentage-82.8%

Awards

- Poster presentation in 100 th indian national science congress
- 1st postion in Jawahar lal Neheru National science exhibition
- 2nd position in regional science exhibition (kolkata region)
- 1st position in school level science exhibition

Publications

Conferences

1. **Suvodip Chakraborty**, Anirban Dasgupta,Aritra Chaudhuri, Aurobinda Routray, "Determination of Ocular Gaze Fixation Point: An EOG Based Approach", *IEEE International Conference on Systems in Medicine and Biology*, 2016
2. Anirban Dasgupta, **Suvodip Chakraborty**, Aritra Chaudhuri, Aurobinda Routray, "Evaluation of Denoising Techniques for EOG signals based on SNR Estimation", *IEEE International Conference on Systems in Medicine and Biology*, 2016
3. Aritra Chaudhuri, Anirban Dasgupta, **Suvodip Chakraborty**, Aurobinda Routray, "A Low-Cost, Wearable, Portable EOG Recording System", *IEEE International Conference on Sys-*

tems in Medicine and Biology, 2016

4. Anirban Dasgupta, **Suvodip Chakraborty**, Priyam Mondal and Aurobinda Routray, "Identification of Eye Saccadic Signatures in Electrooculography Data Using Time-Series Motifs", in *IEEE INDICON*, 2016
5. **Suvodip Chakraborty**, Anirban Dasgupta and Aurobinda Routray, "Development of a wireless wearable electrooculogram recorder for IoT-based applications", in *ISIE*, 2017

Journals

1. A. Dasgupta, **S. Chakraborty**, and A. Routray, A two-stage framework for denoising electrooculography signals, *Biomedical Signal Processing and Control*, Elsevier, vol. 31, pp. 231237, 2017
2. **S. Chakraborty**, A. Dasgupta and A. Routray, Localization of Eye Saccadic Signatures in Electrooculograms using Sparse Representations with Data-driven Dictionaries and Dynamic Time Warping, *Pattern Recognition Letters* (minor Revision)
3. **S. Chakraborty**, A. Dasgupta and A. Routray, A Health Informatics System for the Detection of Computer Vision Syndrome using Electrooculography,*IEEE JBHI* (under review)

Language

Bengali	Mother Tongue
English	Writing:Good,Speaking:Good
Hindi	Writing:Good,Speaking:Good

Technical Skills

Operational Training	Windows,Linux
Programming Language	Matlab,Python,Arduino,C
Boards and instruments	Arduino,Raspberry pi, (256,64)-channel EEG,Open bci,GSR,Spirometer

Interest and activities

My activities include outdoor games namely football or cricket. Photography and reading literature are also included in my day-to-day life. Apart from this i also author a small blog.