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Umang Yadav

Education

University of Toronto, Canada — Sep' 16 - Aug' 18 (Expected)
Master of Applied Science (MASc), Electrical and Computer Engineering
Advisor: **Prof. Dimitrios Hatzinakos**.
Thesis: Focused on Photoplethysmogram (PPG) based Biometric Recognition

Sardar Vallabhbhai National Institute of Technology, Surat, India — July 12 - May 16
Bachelor of Technology (B.Tech), Electronics and Communication Engineering,
GPA: 8.27/10

Interests

Pattern Recognition, Biometric Systems

Publication

A. Manashty, J. V. Light, and **U. N. Yadav**, Healthcare Event Aggregation Lab (HEAL), a knowledge sharing platform for anomaly detection and prediction, in 2015 *IEEE 17th International Conference on e-Health Networking, Applications and Services (Healthcom): Short and Demo Papers (Short Demo)*, 2015, pp. 648 – 652.

Awards

Mitacs Globalink Graduate Research Fellowship, 2016-17.
Edward S. Rogers Sr. Graduate Scholarship, University of Toronto, 2016-18.

Key Projects

Design and Implementation of Lock-In Amplifier for Bio impedance measurements
Supervisor : Prof. Rasika Dhavse | B.Tech Final Year Project — Aug '15 -May '16

- Optimized Technique to implement Synchronous Demodulator for Bioimpedance Measurement.
- Analysed Various Design Parameters. Tested and Simulated each block on Xilinx System Generator and FPGA Spartan 3E kit using 1 kHz sine wave with added noise.

Health Event Aggregation and Localization Platform
Supervisor : Prof. Janet Light and Alireza Manashty | UNB, Saint John — Summer '15

- An efficient and scalable cloud based framework that monitors physiological signals, vital signs, daily schedule/pattern with Statistical methods and Event Detection Techniques to detect and predict anomalies.
- Demonstrated Feasibility on Windows Form Application.

Smart Wheelchair for Differently-Abled People Using Bio-Signals
Supervisor : Prof. Anand Darji | SVNIT, Surat — Summer '14

- Experimented and Collected EEG Data from 21 participants.
- Analyzed Data using MATLAB and Developed an algorithm to drive wheelchair using features extracted from EEG signals such as Mean Power and Mean Frequency.

Other Projects/ Presentation

Photoplethysmography based Heart Rate Calculation using Fingertip Video
Course: Digital Image Processing | Instructor: Prof. Kostas Plataniotis — Dec '16

- Implemented an Algorithm on MATLAB to calculate Heart Rate from Fingertip Video collected from 6 different subjects under different lighting conditions and using different smartphones.

Case Study on E-Payment Systems
At SVNIT-Surat — March '16

- Conducted a Survey on Campus for Method of Payment for Fees.
- Studied different E-Payment Systems, Protocols, Statistics, showed its relevance to On Campus Survey Data, Suggested some new ideas to increase E-Payments.

Seminar on Cloud Based Context Aware Anomaly Detection and Prediction Framework
At SVNIT-Surat | Based on summer research project at UNB Saint John — Nov' 15

Work Experience/ Internships

Graduate Research Assistant Sep'16 - Present
University of Toronto, Canada

Mitacs Globalink Research Intern Summer '15
University of New Brunswick, Saint John, Canada

Teaching

Teaching Assistant, University of Toronto, Canada Winter '17
- CSC 373: Algorithm Design, Analysis and Complexity, Winter 2017

Maths Tutor, Matrubhumi Vidhyalaya, Surat, India Aug'12 - April' 13
- Taught Mathematics Subject to 11th Grade Science Stream Students.

Teaching Assistant, Sulabh Classes, Surat, India May'12- Aug'12
- Grading, Scheduling Tests & Timetables, Invigilation etc., for 11 & 12 grade Students.

Extra Curricular

Joint Secretary, Center for Human Resources Development Oct'14- May'15
Managed Administration Related tasks such as Scheduling and Organizing various Events, Managing Funds, Publicity etc., for Largest Non-Technical Student Chapter of SVNIT-Surat.

Scholar for Change Campaign Dec'15- Jan'16
As a part of this Campaign, run by Ravi J. Matthai Center for Educational Innovation, Indian Institute of Management, Ahmedabad, I prepared manuals in different languages for educational purposes.

Globalink Ambassador Summer 2016
Volunteered to share my experience as Mitacs Globalink Research Intern and help new interns in their preparations such as Housing, Immigration, Payments etc.

Skills

MATLAB, C, Python, Tensorflow

Relevant Coursework

Inference Algorithms and Machine Learning, Algorithms and Data Structures, Random Processes, Digital Image Processing, Digital Signal Processing, Object Oriented Technology, Data Communication and Networks, Digital Communication, Signals and Systems, Principles of Communication, Engineering Mathematics

References

Available upon request