PALLAVI PATIL

Master of Technology - Biomedical Instrumentation
✉ Department of Instrumentation and Control,
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EDUCATION

Master of Technology, Biomedical Instrumentation   *Aug'17–June'19*

- College of Engineering Pune, India

  - CGPA: 8.91
  - Thesis Title: *X-ray tube detector alignment using UWB and IMU*
  - Industrial Alliance: Philips HIC, Pune(India)
  - Supervisor: Prof. Kalyani Bhole

Bachelor of Engineering, Biomedical Engineering   *Aug'11–June'15*

- Mahatma Gandhi Mission's College of Engineering and Technology,Kamothe

- University of Mumbai, India

  - University Rank: 7th
  - Department Topper for consecutive 3 years
  - Percentage: 80%
  - Project Title: *Cholesterol Detection Technology on android application*
  - Supervisor: Dr. Swati Checker

PUBLICATIONS

Articles in International Conferences
2018

- **Patil P.**, and Bhole, K., "Real time ECG on internet using Raspberry Pi.", *In 2018 International Conference on Communication, Computing and Internet of Things (IC3IoT)*, IEEE, Delhi, India,(pp. 267-270). IEEE. 2018.

RESEARCH INTERESTS

- **Biomedical Signal Processing**

  - Worked in bioelectric signal acquisition
  - Nptel course on Biomedical Signal Processing
  - I would love to advance my understanding of subject further by acquisition and signal conditioning of other bio-electric signal like EMG, EEG, EOG and signal classification for specific feature extractions.

- **Medical Imaging and application**

  - Worked as a research intern on X-ray Modality
  - I have special interest in analytics of acquired images from US, MRI, X-ray and application of intelligent computing algorithm like machine learning and deep learning using MATLAB.

- **Biomedical Instrumentation**

  - Worked on Cholesterol detection as a diagnostic product
  - I have keen interest in design and development of diagnostic medical devices for critical health parameters like blood glucose measurement, arrhythmia detection from ECG signal.

PROJECTS

- **X-ray Tube Digital detector alignment using UWB and IMU**

  - Experimented and verified the position and orientation algorithm for Non line of sight placement of detector using MATLAB
  - Displayed the results on Arduino-LCD interface and GUI built in MATLAB
  - Predicted the alignment and validated the results on MATLAB

- **Aid to mood detection using fuzzy controller**

  - Acquisition of real time physiological paramaters like GSR, HR sensor interfaced with arduino
  - Programmed fuzzy logic controller in simulink and established relation between physiological parameters and response to stimulus invoking mood change.

- **Real time ECG on internet using raspberry pi**

  - Acquisition of real time ECG signal using AD8232 sensor
  - Digitisation of signal using python library for ADC on raspberry pi
  - Developed a software to display signal on plot.ly website using python-IoT application
  - Worked in security key of the transmitted signal.

- **Cholesterol Detection Technology**

  - Experimented and verified the cholesterol level in blood with the engineered test strips from polyacryl acetate polymer.
  - Programmed the algorithm for detection of cholesterol on the basis of Hue , Saturation and Intensity.
  - Assisted in the designing of android application for displaying the cholesterol level on phone.

INTERNSHIP EXPERIENCE

Philips Healthcare Innovation Centre, Pimpri, Pune.   *August'18 - July'19*
*P*osition: Research Intern

- Studied Mobile X-ray Modality and various digital detectors and imaging software in module

- Studied the working of various assemblies like digital motion board control, handle release control, brake mechanism

- Studied the electronic schematic of digital motion control board for the motion of the cart of mobile machine.

- Carried out analysis of of battery health via various experiments and validation on the generator and motor battery charging board.

- Studied the process of taking exposure and images from phantoms(human organ models)

- Successfully completed M.Tech Project on X-Ray tube digital detector alignment using UWB and IMU.

POSITIONS OF RESPONSIBILITY

- **Teaching Assistant.** *July'18–Dec'18*

  – Served as TA for **Numerical Methods** for undergraduate students.
  – Responsible for conducting practicals and tutorials for a class of 60 students.

- **University Representative** *Aug'14–June'15*

  – Member of College Committee
  – Responsible for communicating issues faced by students regarding academics and marksheets to university.

- **Undergraduate Class Representative**

  – Served as Class Representative (CR) for 3 years from 2012-2015
  – Responsible for management of various academic activities and technical talks for students

- **Voluntary Teacher**

  – Volunteered as teacher for school established for economically/socially backward students

AWARDS AND FUNDING

- Full time Scholarship awarded in M.Tech for qualifying Graduate Aptitude Test in Engineering (GATE) in Instrumentation Stream *Aug'17 - Aug'19*

- Ratan Tata Trust Scholarship for securing distinction in academics *Aug'14*

SKILLS & INTERESTS

- **General**

  – Signal Conditioning, Image processing

- **Programming languages**

  – HTML, Python.

- **Tools**
  - MATLAB/Simulink, LaTeX, Microsoft office suite.
- **Development**
  - Arduino IDE, Linux.

WORK EXPERIENCE AND TRAINING

Xcellance Medical Technologies Pvt. Ltd, Rabale, Thane *June'15 - April'16*
Position: Regulatory Affairs Executive

- Ensured the design and development of medical products is in accordance with standard protocols of IEC,BIS,CE,FDA

- Handled internal and external audits according to ISO 13485 and ISO 9001

Global Institute of Regulatory Affairs, Pune *Aug'16*

- Training for Medical Devices Regulatory Affairs

PERSONAL DETAILS

- Full Name: Pallavi Ajay Patil
- Citizenship: Indian
- Date of Birth: 14 October 1993

REFEREES

Dr. Kalyani Bhole
Assistant Professor, National Instruments Lab

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