

Information Technology

B.E. Project proposal

Name of the Guide	Prof. Shriganesh Mane
Title of the project	Image forgery detection system
Domain of the project	Artificial Intelligence
Type of the project	Product based
Funding	Self-Sponsored

Problem statement

People have doing image manipulation using cost free editing softwares. Photoshop is used for good and bad image manipulation. Tampering the image comes under bad manipulation. We can see bad image manipulation in medical field, news media, photography, firm. Falsifying image means tampering the images. Image tampering is a digital art. One who tampers image is just for fun. It comes under illegal activities. In order to prevent users to use forged images.

Project description

Objective	The objective of this project is to identify fake images (Fake images are the images that are digitally altered images). We approached the problem using machine learning and neural network to detect almost all kinds of tampering on images.
Technology involved	<ul style="list-style-type: none"> Md5 algorithm Tetrolet transform
Overall approach	<p>OVERALL APPROACH:</p> <p>Step 1 : Problem Discovery and Current State Of Art discovery</p> <p>Step 2 : Concise to a workable User Requirement Sheet</p> <p>Step 3: Conceptualisation, Architecture and Configuration studies to freeze System Specification</p> <p>Step 4: Benchtop prototyping and Design optimisation</p> <p>Step 5 : Final Sample prototyping and construction (with IP consolidation)</p> <p>Current high-level architecture (which may change after proper problem discovery) is shown below</p> <p>This shall be detailed further in end of sem-1 based on discoveries done in mid of sem-1</p>

Expected deliverables/outcome: Open-source code, design, architecture and technology assets, working prototypes, simulations, datasets, publications, intellectual property, etc.

User and System specification sheet, System architecture, Benchtop prototype results (both hardware and software), Final Demonstration prototype, Consolidated IP file.

Significance of the expected outcome with respect to the state-of-the-art in the field

- Integration of metabolic function to dose adjustment
- Long term data trends help in optimizing treatment methods
- Plotting, analysis and pre-emptive algorithms for sugar management throughout the day

- 'Food Impact' study feature to guide user on implications of food he or she intakes against its actual effect on sugar levels
- Severe event notification through mobile
- Integration of sugar level and metabolism function to determine correct dose levels
- Integration with cloud
- Anti Sepsis design.

Learning outcomes

- Exposure to design thinking
- Surveying techniques and analysis
- Programming skills and algorithm
- Selection of various sensors and applications
- Prototyping
- Research aptitude
- Exposure to hardware-software interface

Relevant Industries /Applications

- G.E
- Dassault system
- Philips
- PLCM

Relevance to the National/Global level competitions: BE Project Topics can be aligned in various Competitions

1. Sparkathon

Link - <https://www.cerebrospark.in/Sparkathon.html>

2. KPIT Sparkle

Link - <https://sparkle.kpit.com/i-innovate>

3. Quest Ingenium

Link - <https://www.questingenium.com/india/top-10-projects/>

4. Accenture Innovation Challenges

Link - <https://accenture-innovation-challenge-2021.hackerearth.com/challenges/hackathon/accenture-innovation-challenge-2021/custom-tab/top-10-teams/#Top%2010%20Teams>

Other Websites

1. <https://www.projectcontest.com/home/categories/events>

2. <https://www.knowafest.com/college-fests/competitions/Project>

3. <https://eventsget.com/events/type/technical-fests/past-events-india/page1/MTY=?cntry=MQ%3D%3D&orderby=2&srchtxt=&og%5B%5D=1&st=10101>

4. <https://saeindia.org/inter-college-project-competition/>
5. <https://circuitdigest.com/contest/india-automation-challenge-2021/#challenge1>

Prior relevant work/projects done by the faculty member

Work is done for development of the literature and collecting information about different health parameters related to sugar management.

References

1. N. Schneeberger*, R. Allendes, F. Bianchi, E. Chappel, C. Conan, S. Gamper, M. Schlund ” Drug Delivery Micropump with Built-In Monitoring” Science Direct Procedia Chemistry 1 (2009) 1339–1342
2. Hyunjae Lee et al, “Wearable/disposable sweat-based glucose monitoring device with multistage transdermal drug delivery module” SCIENCE ADVANCES 2017
3. Jiawei Zhao et al “In vivo monitoring of microneedle-based transdermal drug delivery of insulin” Journal of Innovative Optical Health Sciences Vol. 11, No. 5 (2018) 1850032

Budget estimate

SI No	Item	Justification	Total Budgets
A	Recurring		
	Consumables	Cloud Charges,	2000
	Travel	Traveling to Hospitals, Research Centres,	2000
	Contingencies/Other costs	Paper Publication and Conferences	1000
B	Non-Recurring		
	Equipment	Node MCU, Ardiuno boards, Sugar Level Sensor, Oxygen level sensors, Temperature sensor, Blood Pressure Sensor, GPS	10000
	Fabrication/prototyping costs	Assembling and Interfacing of Sensors with System	10000
	Total Budget (Recurring + Non-Recurring)	Recurring+Non- Recurring	25,000

Sign of the Guide

Project coordinator

HOD