A Synopsis on

Sparsh - A Touch To Transfer

Submitted in partial fulfillment of the requirements
of the degree of

Bachelor of Engineering
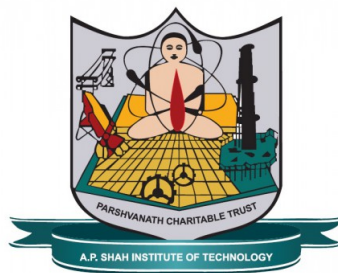
in

Computer Engineering

by

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CERTIFICATE

This is to certify that the project Synopsis entitled *"Sparsh - A Touch to Transfer"* Submitted by *"Ahmed Raza Shaikh (16202012)"* *"Purv Sharma (15102037)"* *"Vinit Shah (16202007)"* for the partial fulfillment of the requirement for award of a degree **Bachelor of Engineering** in **Computer Engineering.** to the University of Mumbai,is a bonafide work carried out during academic year 2018-2019

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Declaration

I declare that this written submission represents my ideas in my own words and where others' ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

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Date:

Abstract

Data Transfer is the Best and Easy Way to Share Your Data, With Any Person. It's also the Fastest Way to get what you Need from Anyone. There are Many Ways in which We can Transfer Data in Today's World.

You can use Cables, USB, Internet, Hard-Drives, Etc. But They All Have Their Individual Drawbacks. They all have a Price, And Speed difference is there in all the Medium. Also, we need to Always carry those Devices like an Electrical Chunk. They can also be Easily Misplaced. Then what ? All the data you accumulated is Lost.

We may have Imagined the Future as a Place Crawling with Antennas and Emitters, Due to the huge growth of Wireless Communications. And it seems that the Current means of Transferring Data might already have a very serious competitor None other than the Human Body. This Technology is Called as HAN (Human Area Network). Our Project makes the Human Body act as a Communication Network between Two Computers to transfer the Data. This makes it the Most Easily Available and Cost-Free Medium to use for Data Transfer in the World. Also we have it with us All the Time.

Introduction

The Computer Revolutionized the Way, We Share Data It gave us the Power to Connect with Different People around the World and Share the Data on a Common Platform Called the Cloud.

So for CLOUD, Look For an Internet Connection To Upload it Over Cloud and Then Get it Into Another Computer, Or He Can Plug a Pen Drive Into One and Connect it To Another Computer and Transfer The File, But Then He need To Take care Of That PEN-DRIVE Like a Child, Because Of the Sensitive Information Stored on That Pen Drive.

So Sparsh comes into Existence.

Sparsh in Hindi Means "Touch". and That's What Our Project is Just a Touch to Transfer Data Through One Computer into Another Computer.

Its a Technology, First Introduced in TED Talks and Developed By Pranav Mistry at MIT Media Labs.

With SPARSH a Person Can Transfer Data from a Computer to Another Computer, Without the Use of Any Internet or Pen Drive, The Medium used in SPARSH to Transfer Data is Our BODY. Our Body Helps Us to Transfer Our Data in The form Of Electrical Impulses from One Computer to another Computer Through the use Of SPARSH.

Objectives

This System is Used to Eliminate the use of Wires, Cables, Internet and Everything that we use Conventionally for Data Transfer. Instead, It Introduces a New Method of Data Transfer using Just the Body as a Medium. And Allowing us to be Free of any Wires. This Makes it Almost Zero-Cost System.

And Also Eliminates the Need of Carrying that USB Transfer Cable with you, All the Time. This is Also Highly Secure, Because No Intervention can be Done in our Body to Steal any Data.

As in the Case of USB Cables or Drives it Can be Stolen or Tampered with For Malicious Activities. But No Tampering Can be Done to Our Human Body, Which Makes it More Secure Compared to Traditional Methods.

Literature Review

- This paper demonstrates a design and implementation of Human Area Network technology that enables communication through human contact.

- Communication between mobile terminals and terminals that are embedded in the environment has become important. Use of cables is inconvenient as they can get tangled and are difficult to manage when used in Communication between devices which are in close proximity.

- When very weak radio signals are used for the communication, data speeds are reduced by packet collision in crowded places such as exhibition sites.

- There is also security risk from unwanted signal interception. For solving such problems we use body of a person as a signal path for communication.

- A transmission path is formed automatically when a person comes into contact with a device and communications between mobile terminals begin.

- We are familiar to the communications medias like LAN (local area network), VAN (virtual area network),MAN (metropolitan area network), WAN (wireless area network).

- This proposed system describes the model of Human area network technology that mainly enables the communication by touch.

- Here we can simply transfers a data by just touching the destination body.

- There are mainly disadvantages are there in communication through wired or wireless networks such as routing of cables, data collision, data lost, risks of security, risk of unwanted or unauthorized users etc. For solving such kindof problems a technology like use of human body as a signal path for transmission is introduced.

- The paper demonstrates a model which can be used to communicate between two mobile using the human body as a medium for communication between two mobiles.

- It is a new technique to connect mobile devices on and around the human body also other electronics devices. Since its operation is in the close proximity of the human body, therefore there are less chances of the signals to be diminished. This model shows the actual communication between two mobile devices which are loaded with android operating system. The model consists of mobile devices, external Bluetooth, amplifier and metal pad.

- Here data transmission path is from first mobile to circuit via Bluetooth, then from one circuit to another circuit via human body and lastly from circuit to another mobile device via Bluetooth.

- The data sent from one mobile can be seen on another device on the android application developed.

Problem Definition

- The Concept Behind SPARSH is Really Simple. It Transfer Data From One Place To Another Only The Medium Changes. Because We are Used of Transferring Data With The Help Of Pen Drives Or Cables Or Through A Software Which Requires a Internet Connection.

- But with SPARSH, We can Transfer the Data without Any Wires or Internet Connection, And Only with the Help of Our Body. What it does is, It Uses 2 Touch Pads on Both the Computer which are Attached to the Computer through the USB. The SPARSH Software needs to be there on Both the Computers. Then we Need to Select the USB-Port to Which the USB is Connected and Check whether its Ready to Transfer Data.

- Once it is Ready, We need to place our One Hand On, One of the 2 Touch Pads of The Device and the Other Hand on The Second Pad and Click on Transfer. Just that and The Data will be transferred to the Other Computer. Without any use of Wires, Or a Cloud Account, Or a Pen Drive. Just with the Help of a Material that's there with Us All the Time.

- And Also Without causing any Harm to Our Body as Our Body is a Great Conductor to Electricity. And Only a mere 5V of Current is Passed Throughout the Process. This Can Help in Speeding Up the Process of Data Transfer, and Also Create a Safer Alternative For Transferring Data without any Interventions.
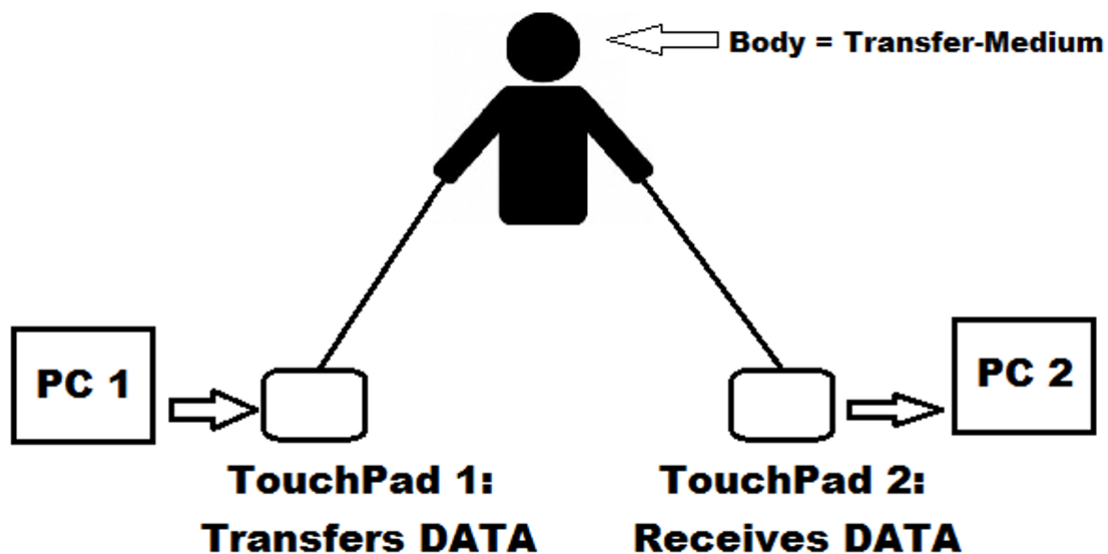

Figure 1: Data Transfer Through Body As Medium
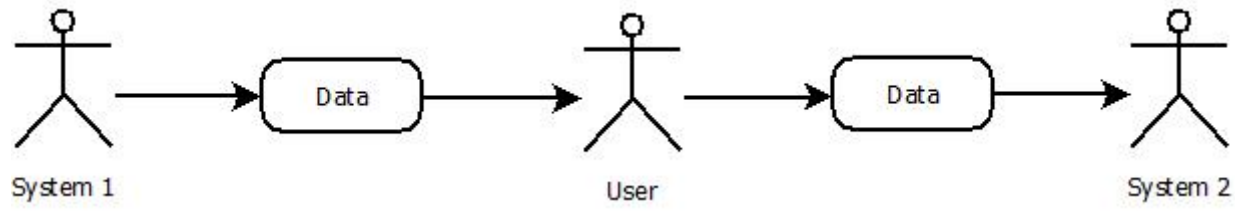
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Use-Case Diagram

Figure 2: System 1 Transfer Data To System 2 Through Body
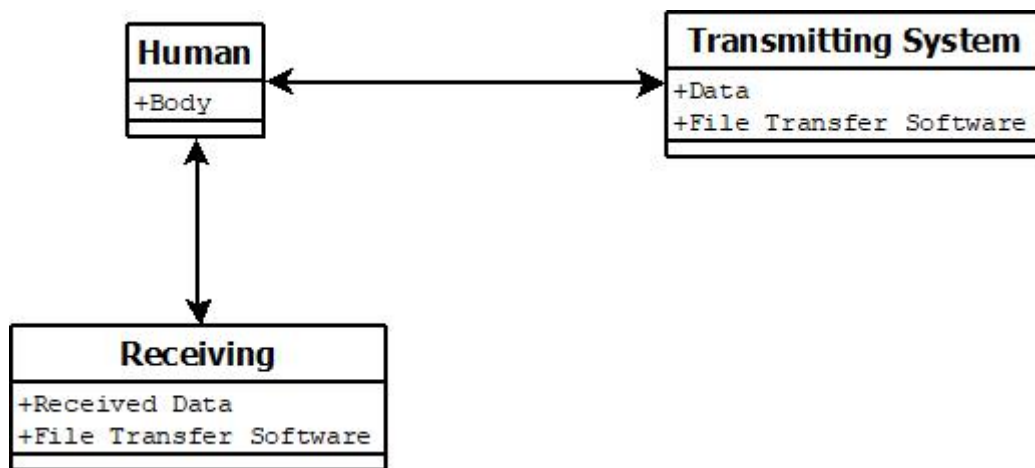
Class Diagram

Figure 3: Data Transfer Through Body As Medium

Summary

- This Technology can prove to be a Boon in the Near Future, Because of its Several Use. We Can Make Touchpads Embedded in a Computer's Keyboard or At a Certain Place in all Our Devices or Laptop to Transfer DATA Seamlessly.

- We Can Also Make a Device Which Can Store the DATA in Our Palm and Then Later When we need it we can extract it to The Computer.

- With This Technology, The Cloud Service can be used to Greater Extent with the Collaboration of Touch PC's to detect a Person's Touch and Transfer DATA through Cloud but With Just a Gentle Touch from One Computer to the Other Computer.

- Due to this System, We can used the Most Easily Available and Accessible resource known to Humans, i.e Our Body. This can reduce the Amount of Electrical Waste to a Huge Extent.

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