



# Mousey Project

Mobile Mouse app version 3.0

# Description

- ▶ Mouse System that allowing mobile control for the computer mouse
- ▶ Same mouse traditional functionality: moving, scrolling, etc.
- ▶ Personalize the user experience by creating its own unique moving model
- ▶ Sending files from mobile to the computer without internet access
- ▶ Real time computer screen viewer
- ▶ Works on Wi-Fi only no need internet connection

# Server

Platform  
PyCharm

Language  
Python

Gui  
tkinter

## Concepts Implemented

- ▶ 3 Layer architecture - Application, Logic, Persistent
- ▶ Message protocol - custom connection protocol based on UDP
- ▶ Encoder Decoder
- ▶ Deep Learning Model, Fine Tuning
- ▶ Connection Manger
- ▶ Generation data evaluation
- ▶ Real Time responses

# Client

Platform  
Visual studio  
code

Language  
Java script \  
Type script

Gui  
React Native

## Concepts Implemented

- ▶ 3 Layer architecture - Application, Logic, Persistent
- ▶ Message protocol - custom connection protocol based on UDP
- ▶ Strategy design pattern
- ▶ Encoder Decoder
- ▶ Sensors manipulation
- ▶ Connection Handler
- ▶ State design pattern
- ▶ Real Time responses

# Communication Protocol

Communication Table: port 1250					
type	from	to	opcode	purpose	stucture
BroadCast	Server	Client	19	Search Mousey	hash(public key) - 40
udp	Client	Server	20	Mousey Found	system Name - 40
					unique ID - 40
					device Name - 40
					battery status - 3
udp	Server	Client	21	Connect Mousey	hash(private key) - 40
udp	Client	Server	22	Generation Data	unique ID - 40
					size of the msg - 10
					data - all the rest ( $\leq 2^{16}$ )
udp	Clent	Server	23	Mouse Click	button - 10
					state - 10
udp	Client	Server	24	Mouse Move	size of the msg - 10
					data - all the rest ( $\leq 2^{16}$ )
udp	Clent	Server	25	Touch Pad Move	last - 10
					size of the msg - 10
					data - all the rest ( $\leq 2^{16}$ )
udp	Client	Server	26	Roller Move	size of the msg - 10
					data - all the rest ( $\leq 2^{16}$ )
udp	Client / Server	Server / Client	27	Logout Mousey	--
udp	Client	Server	28	Mousey Files	name - 40
					date - 10
					fileSize - 15
					data Size - 20
					data - all the rest

# Communication Protocol - 2

udp	Client / Server	Server / Client	29	Split Msg	index - 10
					total size of split - 10
					total size of message - 10
					data - all the rest
udp	Server / Client	Client / Server	30	Recive Split Msg	--
udp	Client / Server	Server / Client	31	Ack Logout Mousey	--
udp	Client / Server	Server / Client	32	FIN	--
udp	Client	Server	33	Mousey Battery	battery status - 3
udp	Client	Server	34	Mousey Start Viewer	--
udp	Server	Client	35	Mousey Veiwer	type of the file - 10
					size of the msg - 10
					data - all the rest
udp	Client	Server	36	Mousey End Viewer	--
udp	Server	Client	37	Ack End Viewer	--
udp	Client	Server	38	Viewer Zoom	state: in \ out - 10

# Features

- ▶ Customize mouse feature
- ▶ Mouse feature
- ▶ Touching pad feature
- ▶ File sender feature
- ▶ Viewer feature

# Customize Mouse Feature

Collecting data from the user

Tagging algorithm for the sensors data

Fine-tuning the movement model



# Mouse Feature

Mouse movement on a surface model

Moving mouse algorithm due to the prediction

Mouse right button

Mouse left button

Mouse roller

Real time movement

# Touch Pad Feature

Moving mouse algorithm due to touching pad

Mouse right button

Mouse left button

Mouse roller

Real time movement

# File Sender Feature

Access the mobile system, download, images and videos files

Enter folders \ returning to the previous folder

Sending Files to the computer

Saving the files any where at the computer

Quick access to the received files

# Preview Feature

Touching pad movement

Mouse right button

Mouse left button

Zoom In \ Zoom out

Real time movement and screen view