1. **An Efficient Algorithm To Detect The Nearest Location Of A Map For A Given Theme**

**Objectives**

This paper presents a calculation for the location of the closest police headquarters for a particular position. These depend on Geographic Data Framework (GIS), Geographic Situating Frameworks (GPS), and the J48 characterization calculation. At the end of the day, the proposed calculation is a successful joining of these three. The striking element of this calculation is that it works with the location of the current ground position on an advanced guide precisely and without any problem. The calculation is tried by recognizing the closest police headquarters of a given organization of the Sri Lankan map. The test outcomes announced a normal precision of 87.92%.

**Tools used**

The SL-SecureNet framework was made out of numerous Application Programming Interfaces (APIs), devices, systems, and libraries. This segment incorporates a depiction of some of them which helps the combination of the NPSD instrument into SL-SecureNet.

**How Work Was done**

J48 Choice Tree Calculation

The J48 choice tree is a prescient AI model that chooses the objective worth (subordinate variable) of another example dependent on different characteristic upsides of the accessible information. J48 is an execution of the C4.5 calculation under the WEKA information mining stage.

Open layers

Open layers is a free and open-source programming interface created utilizing unadulterated JavaScript for showing map information in most present-day internet browsers with no worker side conditions. Google Guides and MSN Virtual Earth APIs are a portion of the comparable APIs with Open layers.

Google Guides

Google Guides is a guide administration given by Google and that can be seen in an internet browser. It very well may be utilized for nothing for non-business purposes. Google Guides works with numerous administrations, for example, the Google Guides site, Google Ride Locator, Google Travel, and guides implanted on outsider sites through the Google Guides Programming interface. It additionally gives the capacity to review nearby business data, including business areas, contact data, and driving headings relying upon the area of a specific beneficiary.

Spring MVC.

MVC is a system truncated for Model-View-Regulator which was made to foster the J2EE applications simpler. Spring MVC tells the best way to move past Java Worker Pages and uses other templating dialects like Speed and Free Marker. Spring MVC is utilized as the URL directing instrument for SL-SecureNet. The existing pattern of a solicitation in Spring MVC is portrayed

Weka

Weka is an assortment of AI calculations for information mining errands. It contains devices for information pre-handling, arrangement, relapse, bunching, affiliation rules, and perception. These calculations can either be applied straightforwardly from Weka itself or can be called from Java source code.

Guide Layers

Spatial datasets are regularly dealt with as layers in Geographic Data Frameworks. To help association, topographical highlights are classified under different subjects like streets, structures, lakes, territories, etc. Information under a specific subject is addressed as an individual guide layer. In SL-SecureNet, Google maps fill in as the base layer in alluding to which different highlights are found.

**Results**

The region considered for testing is in particular Kandy district which is a police locale situated in Sri Lanka. The dataset considered for the Kandy locale comprises 175 occasions. Each occurrence has longitude, scope, and ostensible class esteem (a police headquarters) worried that. Figure 7 shows the dissemination of the cases over the class esteems where the dataset is made out of 12 classes (police headquarters) and the pruned tree acquired via preparing the J48 order calculation is portrayed in Figure 3. The test outcomes demonstrated that the framework can be utilized to distinguish the closest police headquarters successfully.

The joining of the J48 characterization calculation with GIS and A-GPS/GPS procedures has given a fruitful technique for recognizing the closest police headquarters viably and is likewise relevant for where the GIS information of the guide layer isn't accessible. As per the presentation plot displayed in Fig. 8, the NPSD apparatus has shown a normal precision of 87.92%. Albeit the calculation is tried for recognizing the closest police headquarters for a given facilitate position, it very well may be utilized to distinguish the closest area of a guide for a given subject also.

1. **Creation of an artificial intelligence model for intubation difficulty classification by deep learning (convolutional neural network) using face images: an observational study**

**Objectives**

Tracheal intubation is the best quality level for getting the aviation route, and it isn't unprecedented to experience intubation hardships in serious consideration units and trauma centers. As of now, there is a requirement for a target measure to survey intubation troubles in crises by doctors, inhabitants, and paramedics who are new to tracheal intubation. Man-made brainpower (man-made intelligence) is presently utilized in clinical imaging attributable to cutting-edge execution. We intended to make a simulated intelligence model order intubation challenges from the patient's facial picture utilizing a convolutional neural organization (CNN), which interfaces the facial picture with the genuine trouble of intubation. Tracheal intubation, Intubation trouble, computer-based intelligence, Actuation heat map

**Tools that were used**

To accomplish the above goals, these materials were utilized to assist with building a fruitful Man-made brainpower model utilizing profound learning by connecting the patient's facial picture and the intubation trouble. Recipient working trademark bends of real intubation trouble and man-made intelligence, affectability, explicitness, and region under the bend (AUC) were determined; middle AUC was utilized as the outcome. Class initiation heat maps were utilized to envision how the artificial intelligence model arranges intubation troubles.

**How Work Was done**

Patients booked for a medical procedure at Yamagata College Emergency clinic between April and August 2020 were selected. Patients who went through a medical procedure with adjusted facial appearance, medical procedure with the modified scope of movement in the neck, or intubation performed by a doctor with under 3 years of sedation experience were avoided.

Sixteen distinct facial pictures were acquired from the patients on the day after the medical procedure. All pictures were decided as "Simple"/"Troublesome" by an anesthesiologist, and a computer-based intelligence characterization model was made utilizing profound learning by connecting the patient's facial picture and the intubation trouble.

Recipient working trademark bends of genuine intubation trouble and simulated intelligence model was created, and affectability, particularity, and region under the bend (AUC) were determined; middle AUC was utilized as the outcome. Class enactment heat maps were utilized to envision how the artificial intelligence model groups intubation troubles.

**Results**

The best-simulated intelligence model for ordering intubation challenges from 16 unique pictures was created in the prostrate side-shut mouth-base position. The precision was 80.5%; affectability, 81.8%; particularity, 83.3%; AUC, 0.864; and 95% certainty stretch, [0.731-0.969], showing that the class actuation heat map was concentrated around the neck paying little heed to the foundation; the artificial intelligence model perceived facial forms and recognized intubation challenges.

This is the main investigation to apply profound learning (CNN) to group intubation hardships utilizing a man-made intelligence model.

We could make an artificial intelligence model with an AUC of 0.864. Our artificial intelligence model might be helpful for tracheal intubation performed by unpracticed clinical staff in crises or under broad sedation.

1. **GOOGLE MAP TRAFFIC DATA SCRAPING AND MINING**

**Objectives**

● Metro Development: most of the metro line which runs on the western express expressway is based on the Bandra to Wellspring side. Due, to inadequate development certain paths, is obstructed with blockades which can cause traffic delays. Notwithstanding, this task intends to diminish blockage out and about once finished.

● Cost square: It is obvious from Figures 5 and 6 that the most noteworthy traffic is gotten on Dahisar cost Naka as vehicles will in general log jam close to this space. As found in Figures 7 and 8 the movement time increments during evening busy time and afterward the incline falls around evening time for Bandra to Wellspring course on the expressway.

● More expansion in private vehicles: Mumbai and its encompassing areas have added 9.9% of vehicles out and about in 2019 according to the Monetary Review of Maharashtra 2018-19.

**Tools used**

In other accomplish, this Design information can be effortlessly controlled utilizing Python and Scene for information mining. Information mining or information revelation can be utilized to examine covered-up examples of information into significant data, google Guides and selenium to open each connection, and web scrap information.

How Work Was Finished

A unique dashboard was made utilizing the scene. For making this dashboard separate individual worksheets were first made and afterward joined.

For example, in figure 5 we can see the representation for the evening time region which is a significant level detail. The dashboard shows the normal time for each 30 focuses from street A to B and the other way around in the evening, different traffic zones showed in the shadings red, yellow, and green. Additionally, the dashboard shows the avg, min, and max time needed to travel, alongside the space diagram. With the assistance of longitude and scope focuses, we can plot a guide diagram in a scene.

Then, by utilizing activities I have made intuitiveness in the dashboard which permits route between undeniable level subtleties to low-even out subtleties for more examination. For example, in figure 6 by choosing a specific area which for this situation is the Rani Sati flyover, we can see the outlines zeroed in on that place just ie the low-level subtleties.

**Results**

Information mining is the cycle helpful for the disclosure of instructive and examination of a crude assortment of details called information. In this Exploration project, I have effectively collected information from an unstructured organization to an organized one with the assistance of a web scratching strategy utilizing selenium and python. Next utilizing scene, we can consider the lower-level subtleties top to bottom with the assistance of perceptions. In this exploration, I tracked down that on the whole course of 30kms the most blocked traffic zone regions are Dahisar cost Naka, Seasons of India Malad, Rani Sati flyover, and Jogeshwari east. Different details in regards to the time it takes to go both the way for different time regions were talked about. Additionally, we can associate with the information on the scene taking into consideration better arrangement.

1. **Computer Vision-based Assistance System for the Visually Impaired Using Mobile Edge Artificial Intelligence**

**Objectives**

Normal item classes that ought to be noticed while strolling on walkways incorporate people on foot, canines, felines, bicycles, trees, wall, street, vehicles, motorbikes, bikes, traffic signs, for example, stop signs and signs meaning walkway terminations, walker intersections, and speed limits, traffic signals, traffic cones, road names, public garbage bins, billboards, and so on Huge consideration was paid to giving an agreeable, well-disposed client experience by keeping away from the consistent barrage of the client with data – a typical issue with most existing applications. The total framework can be controlled utilizing a voice-based interface. To diminish the disturbance of insignificant messages, most updates are furnished uniquely upon client demand with exemptions of basic updates identified with client security. Crude discernment refreshes that demonstrate a potential impact with a snag alongside huge height changes are considered basic.

**Tools used**

The apparatuses utilized in developing this undertaking incorporate; OAK-D sensor, SSD-MobileNet model, outside NCS2 gadgets, OAK-D camera, USB-empowered GPS gadget, old Lenovo Yoga PC, and Raspberry Pi.

**How Work Was done**

The artificial intelligence programming framework is partitioned basically into the insight module and UI. The insight module is additionally partitioned into three

major submodules, that is the crude insight, progressed discernment, and localizer submodules.

The crude insight submodule manages deterrent presence identification utilizing profundity data while the high-level discernment submodule furnishes the client with a more complete depiction of the climate utilizing complex PC vision calculations for object location, semantic picture division, and picture characterization.

The localizer submodule is utilized to geolocate the client inside the

climate. The UI module incorporates discourse acknowledgment, text-to-discourse, and SMS submodules.

**Results**

In this undertaking, they fostered a novel, extensive vision framework for the outwardly debilitated indoor and outside route, combined with scene understanding. The

framework is straightforward, in vogue, inconspicuous, and not observable as an assistive gadget. Normal difficulties like recognizing traffic signs, hanging snags, crosswalks,

moving snags, rise changes, and geolocalization are tended to utilizing progressed insight capacities, executed on a low-power gadget. An easy-to-understand voice interface permits clients to handily control and communicate with the framework. Following a few hours of testing in Monrovia, CA, we are sure that this undertaking tends to the most well-known difficulties looked by the outwardly impeded.

1. **The 21st Century Campus Map: Mapping the University of Wisconsin-Madison**

**Objectives**

The reason for the College of Wisconsin\_Madison Intelligent Grounds Guide is to look for, explore, and recover data about explicit highlights nearby. The reason for the Lakeshore Nature Save Grounds Guide is to introduce the rich history and one-of-a-kind topography of the College's Lakeshore Nature Safeguard.

Likewise, the formation of the College of Wisconsin-Madison Intuitive Grounds Guide was attempted to give an effectively open and safe door for clients to get to college offices, structures, assets, and offices.

**Tools used**

The two guides were delivered by the College of Wisconsin-Madison Map making Research center and Grew Principally In Streak 8 Utilizing Actionscript 2.0.

How Work Was Finished

On account of its attention on wayfinding, and because a large part of the data content is populated progressively from incidental sites, the development of the College of Wisconsin-Madison Intuitive Grounds Guide is required generally scarcely any spatial information sources. Spatial information for grounds structures, transportation organizations, athletic regions, and vegeta\_tion cover were gotten from an overhaul of the College of Wisconsin-Madison Cam\_pus Print Guide (http://www.vip.wisc.edu/pictures/campusMapFinal.jpg). The divisions and projects situated inside the building of every ground are assembled progressively from an outside college site kept up with by the College of Wisconsin-Madison Space The executives' Office. The orthophoto map layer and concealed alleviation picture were given by Dr. Forthcoming Scarpace of the College of Wisconsin-Madison Natural Distant Detecting Place.

Additionally, Because of its topical accentuation, information for the Lakeshore Nature Safeguard Intuitive Guide was gotten from a lot more extensive assortment of sources than the College of Wisconsin\_Madison Intelligent Grounds Guide. As the College of Wisconsin-Madison Interac\_tive Grounds Guide, the Lakeshore Nature Safeguard Intelligent Guide utilized the College of Wisconsin-Madison Grounds Print Guide as its base layer for grounds structures, trans\_portation organizations, and athletic regions just as the orthophoto map created by Dr. Blunt Scarpace the College of Wisconsin-Madison Natural Far off Detecting Community. Height shapes and the concealed alleviation picture were gotten from the US Land Overview (http://seamless.usgs.gov). Information on hydrology, present veg\_etation, future vegetation, existing authentic destinations, and disappeared recorded locales were gotten from The Lakeshore Nature Save Groundbreaking strategy (Cronon et al., 2006).

**Results**

The intelligent, online improvement of these guides follows the more extensive college change to advanced media for recovering data and putting together understudy exercises. Albeit the two guides rep\_resent similar grounds, the two intuitive, online guides adopt two particular strategies to grounds planning. We depict these two unique methodologies as a wayfinding-based model and a map book-based model of grounds planning.

1. **Design and Development of Mobile Campus, an Android-based Mobile Application for University Campus Tour Guide**

**Objective**

• To offer help with portable guides and GPS restrictions.

• To give significant data on various milestones.

• To guide understudies/guardians/guests to track down the ideal puts nearby effortlessly.

**Tools used**

Close to Handle Correspondence or NFC is the cutting-edge short-range high-recurrence remote correspondence innovation that empowers the trading of information between gadgets to work with this innovation. Versatile handsets are the principal designated gadgets for this innovation. Administrations based on top of NFC-empowered versatile handsets empower clients to share and get data in a flash, interface with other NFC-empowered gadgets, and even make quick and secure portable installments.

**How work was done**

Java programming language was utilized for the android stage application. SDK android with form 9.0.0 to furnish an android emulator with necessary libraries to assemble android applications and SQLite information bases, which is a lightweight data set motor that gives a little stockpiling size and needs little memory so it is appropriate for android applications. At last, APIs were managed. The Google Guide Programming interface is perhaps the main APIs in the application. It gives to make and to call to Versatile Grounds map with found spots. Likewise, it assists with showing vacationers' present area using GPS on the guide and assists with finding the closest spots to the current area.

**Results**

In this paper, I have introduced the plan and execution of a versatile application called Portable Grounds with which clients can get important data on various milestones of a college grounds and guide understudies, guardians, guests to track down the ideal puts nearby without hardly lifting a finger whenever and anyplace. By versatile grounds, clients can get point-by-point data about significant milestones in text and pictures. It likewise gives clients area-based data of a college grounds which can be perused or questioned through a guide. Understudies and guests can get recent development data naturally when their NFC-empowered telephone comes into reach from another NFC-empowered worker/telephone.

1. **Generating retinal flow maps from structural optical coherence tomography with artificial intelligence**

**Objective**

Given the relationship of OCT and OCTA, we tried to investigate the profound learning's capacity to initially gather among design and retinal vascular capacity, then, at that point create an OCTA-like en-face picture from primary OCT picture alone. By accepting OCT as info and utilizing the more lumbering, costly methodology, OCTA, as a target preparing objective, profound learning could beat constraints with the subsequent methodology and bypass the requirement for creating names.

A fruitful model would bring about the securing of new data from previous information bases given the universal utilization of OCT and may bring about en-face pictures fundamentally less influenced by antiques.

Not at all like current man-made intelligence models which are fundamentally designated towards arrangement or division of pictures, as far as anyone is concerned, this is the main use of counterfeit neural organizations in ophthalmic imaging to create another picture dependent on various imaging methodology information. What's more, this is the primary model in clinical imaging, as far as anyone is concerned, where master comments for preparing profound learning models are avoided by utilizing level-headed, practical stream estimations.

**Tools used**

OCTA imaging. Members went through imaging with a 68 kHz CIRRUS™ HD-OCT 5000 with AngioPlex™

OCT Angiography (ZEISS, Dublin, CA), which works at a focal frequency of 840 nm. To accomplish OCTA imaging of retinal vasculature, a rehashed B-mode filtering convention was carried out in the model.

Four rehashed B-filters were obtained at one position and used to remove the bloodstream signal as recently depicted with the absolute time for single-volume procurement being 3.6 seconds barring the change time before information assortment. the OCT Angiography framework was furnished with movement following through an assistant genuine course of events check ophthalmoscope (LSO) and permitted montaging of pictures with 245 cuts got per volume.

Profound learning. To comprehend the generalizability of the last profound learning model to other retinal vascular illnesses, the dataset was isolated by sickness deduced, and OCTA volumes from diabetic patients were utilized for preparing, approval, and test. In the wake of preparing was finished, the model was tried on volumes from other retinal vascular infections including retinal vein impediments and retinal conduit impediments.

**How work was done**

Patients with any retinal conclusions found in retina facilities at the College of Washington, Seattle, WA were remembered for the investigation. Patients were imaged with both Spectralis OCT (Heidelberg Designing, Heidelberg, Germany) as the norm of care and OCTA as a component of the examination convention. Composed educated assent was acquired before the securing of OCTA. Patients more youthful than 18 or non-English speakers were barred.

OCTA pictures with huge sign quality issues, including signal strength under 6 or over the top movement antiquities were avoided from the examination. This examination was endorsed by the Institutional Survey Leading body of the College of Washington and was in adherence with the fundamentals of the Statement of Helsinki and the Medical coverage Transportability and Responsibility Act. Successive instances of diabetic retinopathy, branch retinal vein impediment, and focal retinal course impediment were saved as a held-out test set.

**Results**

Four distinctive model originals were intended to take a solitary individual underlying B check picture as information and give a derived stream B examine picture as yield which included 5 squares of max pooling and upsampling with 5 convolutional channels, 5 squares with 10 convolutional channels, 9 squares with 9 convolutional channels, and 9 squares with 18 convolutional channels. Furthermore, for each set of the 4 models, 3 distinctive scaffold associations were tried: no extension (like customary convolutional autoencoder network), component insightful summation, and duplicate link.

Every one of these models was prepared from arbitrary introduction with a similar clump number,

preparing/approval datasets, streamlining agent, and learning rate for 5,000 emphases and the most profound model with 18 convolution channels and with duplicate + connection spans had the least MSE. The last model had a sum of 7.85 million teachable boundaries, has a space intricacy of 90 megabytes, and required 6 days of preparing time.

1. Street-Map Based Validation of Semantic Segmentation in Autonomous Driving

**Objective**

Man-made consciousness for self-governing driving should meet severe necessities on wellbeing and strength, which persuades the careful approval of learned models. Nonetheless, current

approval approaches generally require ground truth information and are consequently both expense serious and restricted in their appropriateness.

**Tools used**

They propose to beat these limits by a model skeptic approval utilizing deduced information from road maps, GPS, camera, and Cityscapes dataset

**How work was done**

In this segment, we show far-reaching, measurable outcomes from applying our way to deal with the Cityscapes division dataset. We present outcomes from three perspectives: First, we apply our confinement revision calculation to the ground truth divisions to track down the most precise GPS positions. Utilizing the adjusted positions, we then, at that point apply our road map-based

approval approach on the anticipated division to recognize potential expectation blunders. At last, we contrast our methodology with approval of the expectations with ground truth information.

For our examinations, we utilize the Cityscapes train and approval subsets, for which ground-truth divisions are accessible and which include a complete number of 3475 traffic scenes. We apply extra information cleaning steps and eliminate traffic scenes that contain fragments with the marked ground, which depicts regions that vehicles and walkers share similarly. This mark can not be doled out to one or the other street or no street, which is completely pertinent for our methodology.

**Results**

We proposed to approve AI models with deduced space information and introduced a methodology that approves semantic division covers with given road maps. Specifically, in our methodology, we consolidate the division in 10,000 foot perspective with the field of view in the road

guide and utilize this overlay to register approval blunders. We presented two new approval measurements brought Crossing point over Division (IoS) and Convergence over Guide (IoM) that

we used to recognize division veils with bogus positive and bogus negative street portions. Other than the approval approach, we present a strategy to address the vehicle's GPS position with the goal that more precise confinement can be utilized for road map-based approval. Ultimately, we present quantitative outcomes on the Cityscapes dataset showing that our approval approach can, in reality, uncover mistakes in semantic division covers.

1. **Integration of a city GIS data with Google Map API and Google Earth API for a web-based 3D Geospatial Application**

**Objective**

The advances and improvements in the 21st century have achieved a warm warmth for web innovations. Most applications are currently electronic with cloud support capacities, with Topographical Data Framework (GIS), not left out. Hence, online GIS frameworks have become a basic piece of client and association needs. Since it gives simple utilization, a quick sharing choice, and is effectively available to public clients.

**Tools used**

Google Earth Programming interface, Google Earth Guide, XML data sets, HTML codes, program, and JavaScript codes were utilized for the improvement of electronic Topographical Data Framework (GIS)

**How work was done**

In this examination, a web application has been arranged for Ede City situated on organizes 7°44'12.75" N 4°26'10.03" E, a site page has been arranged with Google Earth and Google Guide Google Earth and Google Guide Programming interface are utilizing JavaScript language and empower clients to alter applications and add guides to their site pages.

For this application, all the tweaking and dealing with the information are ready in JavaScript code blocks. The JavaScript codes are inserted into the HTML codes block utilizing the <script> labels.

Google Earth Guide has been incorporated into the site page for showing the areas, headings, and placemarks that improve the 3D model show of the investigation region. Likewise, Google Guide is utilized to show the characteristic information.

**Results**

This electronic GIS application shows how Google Guide incorporated with Google Earth Programming interface can be utilized for thorough online 3D city models. By putting away the relating property information in an XML data set, the definite data about an area on the 3D guide is shown which gives clients a more reasonable encounter and data for client needs. Incorporating with the Google Guide permits street bearings, road names, and any remaining area data to be acquired along with the 3D structures. This application will expands efficiency and data sharing for private clients, nearby organizations, and the overall population by making it simple to see, investigate, and make maps with definitive neighborhood geographic information.

1. **Artificial Intelligence in Geospatial Analysis: applications of Self-Organizing Maps in the context of Geographic Information Science**

**Objectives**

1. to audit SOM, zeroing in on certain highlights that are natural to GIS researchers like geography and perception methods;

2. to audit the utilization of SOMs in the geospatial setting, looking at changed methodologies, results, and accessible devices;

3. to inspect more prospects of adjusting the SOM calculation to the GIS-disapproved of examination;

4. to propose the utilization of the SOM to manage a few GIScience issues.

**Tools used**

GPS-route gadgets and mobile phones, Earth Perception Satellites, Programming interface, KML (Keyhole Markup Language), OpenStreetMap, and GeoSOM Suite apparatus

**How work was done**

they began by present a survey on SOMs, depicting the calculation and the definition related to it. Uncommon consideration was given to the SOM representation apparatuses, which were completely recorded and depicted. An ordered characterization to bunch these apparatuses was proposed, and every one of the visual investigation techniques was grouped in like manner.

A subsequent survey zeroed in on the utilization of SOM to manage geospatial information. Various methodologies utilizing SOM in the geographic setting were broke down and, to give an organized perspective on this load of strategies, a scientific categorization of those techniques was additionally proposed. This audit presents a broad investigation of the potential outcomes of adjusting the SOM calculation to the GIS-disapproved of examination.

Four unique applications were created in this postulation, having a place with three distinct GISc‟s themes: 1) map-making and perception; 2) spatial information mining, and 3) area/distribution streamlining.

**Results**

HSOM was carried out in the GeoSOM Suite as displayed in Figure 62. GeoSOM Suite presents an interface where the client can pick the HSOM inputs, because of the SOMs made previously, and additionally the first factors. Hence, to make a design like the one

1. In the map-making and representation setting Another technique to make region cartograms;

2. In the spatial bunching setting

A further developed technique to perform spatial bunching from high-dimensional datasets; Another strategy to perform topical spatial grouping from geospatial data sets;

3. In the area/portion improvement setting Another strategy to oversee automated vehicles characterizing an improved way to best cover occasions in a particular district.

1. **TEACHING ASSESSMENT TOOL: USING AI AND SECURE TECHNIQUES**

**Objectives**

Most schools utilize a school journal for correspondence among parents and educators. However, utilizing this strategy has numerous limits. In this paper, we have explored the different factors for why this sort of correspondence isn't viable and why we should change to advanced correspondence. We have likewise looked into our android portable application 'Guide N Develop', which is utilized for computerized correspondence between guardians, schools, and educators. By utilizing this framework, any school can make the correspondence among parents and instructors more successful.

**Tools used**

A simulated intelligence-based application was made or planned considered Guide and Develop that assists Guardians with imparting about their wards with their educators.

**How Work Was done**

An application was fostered that comprised of three sorts of clients for example

1. School Administrator

2. Teachers

3. Parents

The client will sign in to the application that is comprised of modules and capacities. In which the client will follow techniques to sign in first. This is to get the application from unapproved clients. After which a Route page will open which is the principal page of the application. From here the client can get to different modules which are;

i. Group Talk

ii. Classwork or Schoolwork

iii. Announcement

iv. Timetable

**Results**

This plan is of our application 'Guide N Develop', its capacities essentially incorporate client approval login, parent-instructor visiting and execution sharing of the understudy, declaration of occasions and brochures, schedule, test timetable, classwork, and task sharing, and so forth The plan has inadequacies, we desire to keep on working on through future endeavors. In utilizing portable applications like the 'Guide N Develop', the better approach for connecting with schools can be changed to current ways. Hence "Guide N Develop" gives a proficient and savvy answer for guardians for their kid's exhibition.

1. **AN ARTIFICIAL INTELLIGENCE APPROACH TO ASSESS SPATIAL PATTERNS OF RETINAL NERVE FIBER LAYER THICKNESS MAPS IN GLAUCOMA**

**Objective**

The motivation behind this examination was to arrange the spatial examples of retinal nerve fiber layer thickness (RNFLT) and evaluate their relationship with visual field (VF) misfortune in glaucoma.

**Tools used**

We utilized matched solid 24-2 VFs and optical soundness tomography outputs of 691 eyes from 691 patients.

**How Work Was done**

The RNFLT maps were utilized to decide the RNFLT designs (RPs) by non-negative framework factorization (NMF). The RPs were connected with mean deviation (MD), circular same (SE), and significant vein areas. The RPs were additionally used to foresee th(Wang et al., 2020)e 52 all-out deviations (TD) values by direct relapse contrasted and models utilizing 24 15-degree areas. Last, we connected the RPs with normal TDs of the focal upper two areas (C2-TD). Stepwise relapse was applied to eliminate repetitive highlights.

**Results**

NMF featured 16 unmistakable RPs. Twelve RPs had arcuate-like enlightening (zones): six with unrivaled zones, five with sub-par ones, and one RP with a bi-hemifield iZone, and four with non-arcuate-like fleeting or nasal zones. Twelve, nine, nine, and nine RPs were fundamentally (P < 0.05) corresponded to MD, SE, and prevalent and mediocre course areas, individually. Utilizing RPs altogether (P < 0.05) worked on the expectation of 52 TDs contrasted and utilizing 24 15-degree areas. Utilizing RPs essentially (P < 0.001) further developed the C2-TD expectation identified with diminishing in the sub-par weakness zone contrasted and utilizing the 24 sectoral RNFLTs.

1. **THE HUMAN FACTOR IN AUTOMATED IMAGE-BASED NUTRITION APPS: ANALYSIS OF COMMON MISTAKES USING THE GOFOOD LITE APP**

**Objective**

This investigation plans to break down normal mix-ups made by members utilizing the food Light application, an adaptation of food, which was intended for food-logging, yet without giving outcomes to the clients, to further develop both the directions gave and the mechanized functionalities of the application.

**Tools used**

The apparatus utilized was the food Light application.

**How Work Was done**

The 48 examination members were offered eye to eye guidelines for food Light and were approached to record 2 pictures (1 chronicle) previously and 2 pictures (1 account) after the day-by-day utilization of every food or refreshment, utilizing a reference card as a fiducial marker. All photos that were disposed of for handling because of errors were broken down to record the fundamental slip-ups made by clients.

**Results**

Of the 468 accounts of nonpackaged food things caught by the application, 60 (12.8%) must be disposed of because of blunders in the catching method. The important issues were as per the following: incorrectly fiducial marker or inappropriate marker use (19 chronicles), plate issues like a noncompatible or nonvisible plate (8 accounts), a blend of different issues (17 chronicles), and different reasons like impediments (hand) before the camera or coordinating with recording sets (16 chronicles).

1. **MACHINE LEARNING FOR MAP INTERPRETATION: AN INTELLIGENT TOOL FOR ENVIRONMENTAL PLANNING**

**Objective**

• The utilization of emblematic depictions straightforwardly produced from maps by a preprocessing

the unit considers the mix of the visual data with printed data

from various sources.

• The acknowledgment rules can be naturally gained from positive and negative

models and refreshed.

• The chance of learning-subordinate ideas permits the acknowledgment of the shift

of the language, which is valuable to defeat issues like zooming and

windowing when attempting to decipher similar pictures at various scaling levels.

• The depiction language received for the principles is entirely conceivable for specialists,

so they can handle the meaning of the gained ideas for natural

arranging assignments.

• The deduced rules are valuable for order and forecast undertakings, yet

additionally for setting based data recovery, since the ideas take into account the

semantic ordering of the guide component.

**Tools used**

This is acquired by applying two distinct inductive learning frameworks created at the College of Bari, specifically INDUBI/CSL and ATRE, and a geological guide.

**How Work Was done**

During the preprocessing stage, a representative portrayal, separated straightforwardly from the computerized map, is naturally produced. To begin with, the information map, which is in vectorized structure, is portioned into standard cells, every one of which establishes a model utilized for the learning stage or a rudimentary unit to be grouped. Once in a while, it is important to change over cells that are not spatially adjoining on a similar guide and to utilize more guides. The preprocessing module permits the change of a whole guide or the change of chosen cells indicated utilizing their limitation. Guide translation requires a more significant level of data than that contained in a vectorized map.

**Results**

Utilizing learning calculations on pictures to interface machines and people offers an intriguing new application area for AI. The chance of applying emblematic significant level portrayals permits us to fill the hole between the visual information and more conceptual portrayals and to see the issue of picture understanding as a portrayal change issue.

1. **A Real-time Disaster Situation Mapping System for**

**University Campuses**

**Objective**

This paper proposes a continuous catastrophe circumstance planning framework for grounds. College grounds have different highlights and issues. fiasco anticipation, grounds map, circumstance data gathering, PlaceEngine, online media. That is

• Helps clients (understudies, staff, resources, guests) in departure or salvage

• Helps the debacle countermeasures office inside/outside the grounds

• Accessible for use in regular circumstances (not simply amid calamity)

**Tools used**

The framework is created by utilizing the guide by and large, portable/cell phone, SQL for data set HTML, and javascript for web application improvement.

**How Work Was done**

The RDSM framework comprises of two subsystems: the "circumstance gathering subsystem

(SGS)" and the "circumstance planning subsystem (SMS)".

Circumstance gathering subsystem (SGS). The circumstance gathering subsystem (SGS) works with the help of individuals on the grounds to send circumstance data (e.g., wellbeing or risk, harmed circumstance) of the area where they are remaining around then, utilizing cell phones (PC or telephone). Their area data (level of scope and longitude) can be determined by PlaceEngine

Circumstance planning subsystem (SMS). The circumstance planning subsystem (SMS) reflects circumstance information that is sent by clients onto maps. It peruses information of the circumstance data set that is refreshed by SGS on demand from clients. Guides are made out of three levels: by and large grounds map level (it presents an elevated perspective), building and floor map level, and itemized data of calamity circumstance by room type (e.g., homerooms, workplaces, research facilities) level. The circumstance data sum is shown at the general grounds level. By clicking a specific structure on the general grounds map, a structure and floor map show up. Calamity circumstance data like fire, salvage required, constructing harm, property annihilation, and flood harm are displayed by symbols. At the point when those circumstances were educated is likewise displayed on this level guide.

**Results**

As referenced in past parts, the RDSM framework works with help of general clients (understudies, staff, resources, guests) and catastrophe countermeasures office on grounds for viable departure and salvage. Consequently, the RDSM framework works with Kyojo (shared help) which is relied upon to lessen catastrophe harm, and it can assume the part of web-based media.

1. **Location-Aware Tools for Improving Public Transit Usability**

**Objective**

By assisting explorers with moving from single-inhabitance vehicles to public travel frameworks, networks can lessen gridlock just as its natural effect. gives ongoing appearance data, an excursion organizer, a timetable and course program, and a travel amicable objective locater for Seattle-region transport riders. In this article, we focus on the instruments it accommodates constant appearance data, which is accessible through an assortment of interfaces for cell phones. Such data is important for both new and successive riders since it tells those holding up at the bus station whether the transport is as yet coming or then again if they just missed it. Furthermore, regular riders can more readily time when they leave for the bus station to limit time spent pausing.

**Tools used**

In other to for them to accomplish the above-proposed goals, they have utilized the accompanying apparatuses. Google Guides, cell phone, OneBusAway instruments, google compliment editorial manager android studio, and javascript.

**How Work Was done**

At last, we assessed 12 members to contrast what amount of time they required to play out an ordinary data query with the help of an area mindful guide-based interface, a guide-based interface without area data, and a book-based pursuit tree from the current OneBusAway versatile Web interface.

The particular assignment was to figure out continuous appearance data for a close-by transport stop. As we referenced before, the majority of the current OneBusAway portable instruments accept clients as of now have the quantity of the stop they're attempting to discover. Albeit this strategy functions admirably when the client is truly at the pause and can see the posted number, it isn't helpful when the stop number isn't composed on the stop or when the client isn't yet at the stop.

The area mindful guide-based interface shows the client's area on a guide. Squeezing an activity button consequently zooms the guide to that area, far enough out to show the five nearest stops. Conversely, with the guide-based interface without area data, the client can utilize standard guide route strategies to zoom and container the guide to the current area, so, all things considered, the application gives an activity catch to consequently show all travel stops inside the current guide see.

**Results**

The outcomes, summed up in the above strategies affirm our speculation that the area mindful guide-based interface is the quickest for exploring to an objective stop. No matter how you look at it, every member was quickest when utilizing it (9 seconds all things considered).

Google Guides travel trip organizer in OneBusAway on the off chance that you could bookmark normal objections so you can tap it regardless of where you are, and it will give you the course from where I'm to that spot." This remark recommends that our present application takes a beginning-focused perspective on travel use.

1. Artificial Intelligence in the path planning optimization of mobile

agent navigation

**Objectives**

A large number of scientists are working on finding new solutions for different subsections of mobile agent applications such as navigation, localization, optimal path planning, object detection, movement of the robot. In our research, a mobile agent and a mobile robot are considered. In this paper, we will focus on the path planning optimization of the mobile agent using a computational intelligence algorithm. We will focus on discussing solutions for:

TSP problem and a modified TSP when the agent does not have to get back to the starting point.

Finding a closely optimal path from the resolved TSP.

For the TSP solving a Kohonen map was used with a proposed cost function in the winner neuron's selection. In the following section, the TSP problem, the artificial neural network structure and network training results with the resolved TSP with Kohonen map, and optimization of path planning between a starting node and a target node on the map will be presented.

**Tools used**

An artificial neural network map called Kohonen

**How it works**

The following two tasks for a mobile agent were taken into consideration: In the first form, the mobile agent has to supervise an area and move back to the starting node. In the second form, a mobile agent has to clean an area starting from one node and finishing the work in the end node. The second application can be used if we have a large area discomposed in subareas, and for each subarea, the entering and outcoming nodes are defined. The agent has to visit each node. The self-organizing map was described as an artificial neural network by Teuvo Kohonen and often is called the Kohonen map. The Kohonen map is an artificial neural network with an unsupervised training algorithm Kohonen, 2011. Compared to the multi-layer feedforward network, the output of the Kohonen map is processed as a linear combination of the network weights and the network input. The network output is composed in general according to (1), but according to specific optimization applications, the network output can be processed using a cost function. The self-organizing map uses a neighborhood function to preserve the topological properties of the input space. The neurons of the network are placed based on topology. After the processing of the network output, based on a criteria function, the winner processing element will be defined. The weights of the winner processing element and the ones of the processing elements in the neighborhood of the winner artificial neuron are trained based on the Hebb or anti-Hebb rule. During the training process of the network, the neurons are organized according to the topology so that neurons with similar weights will be arranged closely to each other according to the topology.

The network neurons represent the nodes that the agent visits. A topology has to be defined so that it corresponds to the expectations of the TSP task. Each neuron can have two and only two neighboring nodes. One is from which the agent arrives and the other is where the agent will be in the next step. If the agent needs to get back to the starting point, this means that the first and the last neuron are the same. It can easily be concluded that this is equivalent to a ring-type topology. The neighborhood function defines/influences the neurons for which the weights will be updated. The neighborhood function value for the neuron close to the winner has a significant value close to 1 and the value of the neighborhood function for neurons far from the winner will have an insignificant value close to zero and will block the update of weights for these neurons.

**Results**

The intelligence of the robotic agent is considered based on the use of a computational intelligence algorithm used for the optimization of path planning. The robotic mobile agent uses an unsupervised neural network for the TSP solving, and from the TSP results the finding of a closely optimal path between two points in the agent's working area. The criteria functions mentioned work well during the teaching. If the penalty part of the cost function prevails, the number of learning cycles increases. At the tuning phase, it must be considered that the teaching is started with neighboring values high enough. If the neighboring degree is low, most of the nodes will not be part of the

solution.

1. Development of an Artificial Intelligence System for Detection and Visualization of Auto Theft Recovery Patterns

**Objectives**

According to a recent statistic, every 20 seconds a motor vehicle is stolen in the United States. Law enforcement officers work daily to locate and retrieve stolen cars, while insurance companies spend billions of dollars each year compensating owners of stolen vehicles. This model helps users to develop a scalable tactical crime analysis tool for auto theft events, specifically for identifying and predicting drop-locations through a cluster analysis approach.

**Tools used**

Crimen, Crime map, Oracle-based Orange County Sheriff’s Office Portal web site, ArcIMS, UTM (Universal Transverse Mercator) coordinates

**How it was done**

A map interface allows the user to visualize the feature clusters and produce detailed reports. Such GIS applications give us the ability to attain a geographical perspective of incidents within the community, thus helping law enforcement officers discover the patterns of incidents.

A simulation data from Crimenet on auto theft events that took place in Orange County from January 2002 to April 2003 were collected. At its basic level, it is a series of query-based reports that return information gathered from various sources within the Orange County Sheriff's Office. These sources are data entered into the Tiburon RMS (Records Management System), data collected in spreadsheet format by the Crime Analysis Unit, and Legacy data from the CARS EMS system. The entire Crimenet system is accessible through the Oracle-based Orange County Sheriff’s Office Portal website.

The system makes use of two primary elements within the Oracle system; Portal's ability to define and generate reports and forms, and the ability to program customized reporting using PL/SQL. All code, reports, forms, tables, and views are stored within the Crime map schema on the Oracle Portal server. To allow flexible reporting, Crimenet converts data from the various sources to a richly structured database schema stored within the Crime map schema on the server. Reports are then built to display this data in a format required by the Crimenet users. Tiburon data is accessed both directly (in reports where up to the minute data is required) via a database link, and also via a shadow database, which has been indexed to allow for faster access to specific reports.

The dataset we used for our preliminary simulations has approximately a thousand auto theft events. This is a small fraction of all the events we have in our database because the rest of the entries do not have a matched address that could be converted into numerical (X, Y) coordinates. The X and Y for the recovery addresses are generated by a geocoding server. In our experiments, for X and Y coordinates, we used UTM (Universal Transverse Mercator) coordinates. UTM is a planar coordinate system, which simply measures in meters east and north from two perpendicular reference baselines (Hick et al. 2004).

However, spherical (latitude/longitude) or any other coordinate system would be equivalently useful. The geo-coding server used here is ArcIMS, which is currently used for the Crime map system. Each event is characterized by the following five features: Make of the vehicle, Year of the vehicle, X and Y coordinates of the recovery location, Date of the theft.

Make of the stolen vehicle is a unique numerical value for each different make. In our dataset, we had 62 different makes of vehicles. The Year of the vehicle is a numerical value ranging from 1970 to 2003. The (X, Y) coordinates are UTM coordinates (real numbers).

**Results**

Breaking down a set of events by such sequences demonstrates spatiotemporal patterns that are often more predictably reliable than those discovered by static statistical methods because the local patterns may disappear when looking at global statistics. Some of the clusters are composed of not only the same make but also the same model of the vehicle. In addition to the five fields available in the dataset, every record in a cluster is given an ID number to ease references to specific records.

1. Learning and inferring transportation routines

**Objectives**

The main purpose of this project is to learn and infer a user’s daily movements through an urban community. The model created from this project can robustly track and predict a user’s location even with the loss of GPS signals or in the presence of other sources of noise, infer a user’s mode of transportation (i.e., traveling by foot, car, or bus) and predict when and where she will

change modes Infer the locations of transportation destinations, such as a home or workplace.

**Tools used**

Global Positioning System (GPS), Hierarchical Markov model, Rao–Blackwellized particle filters

**How work was done**

The model uses multiple levels of abstraction to bridge the gap between raw GPS sensor measurements and high-level information such as a user’s destination and mode of transportation. To achieve efficient inference, we apply Rao–Blackwellized particle filters at multiple levels of the model hierarchy. Locations such as bus stops and parking lots, where the user frequently changes the mode of transportation, are learned from GPS data logs without manual labeling of training data. We experimentally demonstrate how to accurately detect novel behavior or user errors (e.g. taking a wrong bus) by explicitly modeling activities in the context of the user’s historical data. Finally, we discuss an application called “Opportunity Knocks” that employs our techniques

to help cognitively impaired people use public transportation safely.

**Results**

Our results show that the approach can provide predictions of movements to distant goals, and support a simple and effective strategy for detecting novel events that may indicate user errors.

The main limitation of the system is that it uses fixed thresholds to extract goals and mode transfer locations. In practice, any fixed threshold leads to errors. Some significant goals, for example, the place where the user drops off his children at school, maybe visited only briefly, and so would be excluded by a high threshold. A lower threshold, however, would include too many insignificant locations, for example, a place where the user briefly waited at a traffic light. Our most recent work addresses this problem by developing a unified model that simultaneously solves the tasks of identifying and labeling significant locations and inferring transportation routines.

1. **Semantic Web Road map**

**Objective**

The Web was planned as data space, with the objective that it ought to be valuable not just for human-human correspondence yet in addition that machines would have the option to partake furthermore, help. One of the significant obstructions to this has been the way that most data on the web is intended for human utilization, and regardless of whether it was gotten from a data set with distinct implications (in essentially a few terms) for its sections, that the design of the information isn't clear to a robot perusing the web. Leaving to the side the computerized reasoning issue of preparing machines to act as individuals, the Semantic Web approach all things considered creates dialects for communicating data in a machine-processable structure.

**Tools used**

They utilized HTML, SQL database, Javascript, and CSS to help them fabricated a particularly Semantic guide.

**How work was done**

for a rendition n execution to have the option to peruse enough RDF pattern to have the option to

derive how to peruse an adaptation n+1 report; for a sort, An application grew freely of a kind B application which has something very similar or comparable capacity to have the option to peruse and deal with enough blueprint data to have the option to deal with information from the sort B application. It might obviously by and by to foster a jargon that aides in both of two different ways: It permits normal amazing question types to be communicated compactly with fewer pages of science, or It permits certain obliged inquiries to be communicated, which are intriguing because they have certain processability properties.

**Results**

In execution, this implies that the thinking motor should be attached to the mark check framework. Reports will be parsed into trees of declarations, however into trees of attestations about who has marked what statements. Verification approval will, for derivation rules, check the rationale, yet for attestations that an archive has been marked, check the mark.

The outcome will be a framework that can communicate and reason about connections across the entire scope of public-key-based security and trust frameworks. The computerized signature becomes intriguing when RDF is created to the level that a proof language exists. Notwithstanding, it tends to be created in corresponding with RDF generally.

**Yamini Singh Major**

**Objective**

It became simpler to send messages without composing any word, Looking on Google without opening the program, and performing numerous other day-by-day errands like playing music, opening your #1 IDE with the assistance of a solitary voice order. In the current situation, progressions in innovations are to such an extent that they can play out any errand with similar viability or can say more adequately than us. By making this task, he understood that the idea of man-made intelligence in each field is diminishing human exertion and saving time. Functionalities of this undertaking include:

**Tools used**

The instruments and advancements utilized are PyCharm IDE for making this task, and I made all py documents in PyCharm. Alongside this, I utilized the accompanying modules and libraries in my undertaking. pyttsx3, SpeechRecognition, Datetime, Wikipedia, Smtplib, pywhatkit, pyjokes, pyPDF2, pyautogui, pyQt, and so on I have made a live GUI for collaborating with the JARVIS as it gives a plan and fascinating look while having the discussion.

**How work was done**

As the initial step, introduce all the vital bundles and libraries. The order used to introduce the libraries is "pip introduce" and afterward import it. Computerized reasoning when utilized with machines, it shows us the ability of reasoning like people. In this, a PC framework is planned so that ordinarily requires collaboration from the human. As we probably are aware Python is an arising language so it turns out to be not difficult to compose content for Voice Colleague in Python. The guidelines for the collaborator can be taken care of according to the prerequisite of the client. Discourse acknowledgment is the Alexa, Siri, and so forth In Python, there is a Programming interface called Discourse Acknowledgment which permits us to change over discourse into text. It was a fascinating assignment to make my collaborator. It became simpler to send messages without composing any word, Looking on Google without opening the program, and performing numerous other day-by-day assignments like playing music, opening your number one IDE with the assistance of a solitary voice order. In the current situation, headways in innovations are to such an extent that they can play out any undertaking with similar adequacy or can say more viably than us. By making this undertaking, I understood that the idea of simulated intelligence in each field is diminishing human exertion and saving time.

**Results**

As these voice partners are utilizing Computerized reasoning thus the outcome that they are giving is profoundly exact and productive. These partners can assist with lessening human exertion and burns-through time while playing out any assignment, they eliminated the idea of composing totally and act as another person to whom we are talking and requesting to play out the undertaking. These partners are no not exactly human aides except for we can say that they are more powerful and proficient to play out any errand. The calculation used to make these right-hand centers around the time intricacies and diminishes time.

However, for utilizing these partners one ought to have a record (like Google represents Google collaborator, Microsoft represents Cortana) and can utilize it with a web association simply because these colleagues will work with a web network. They are coordinated with numerous gadgets like telephones, PCs, and speakers, and so forth