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<b>Team leader</b>	Dhivya V
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<b>Project title</b>	Detecting parkinsons diseases using machine learning

## Literature survey

### Paper 1:

<b>Title</b>	oligodendroglial markers distinguishes Parkinson's disease from multiple system atrophy
<b>Author</b>	suman dutta, Simon hornung, adria kruayatidee, katherinen.maina,irish del rosario
<b>Journal</b>	Springer link
<b>Year</b>	2021
<b>Methodology</b>	electrochemiluminescence ELISA.
<b>Scope</b>	They tested and validated a blood-based diagnostic biomarker in two independent cohorts, which separates two related synucleinopathies, PD, and MSA, with high sensitivity and specificity. The biomarker is based on measurement of $\alpha$ -syn concentrations in putative neuronal and oligodendroglial exosomes isolated from patients serum or plasma. Additional validation in larger cohorts, and eventually in pathologically confirmed sample when those become available, may facilitate the use of this biomarker, potentially in combination with recently discovered ones, such as clusterin and fibrillar $\alpha$ -syn, for routine clinical diagnosis of these diseases.

**Paper 2**

<b>Title</b>	Profiling novel metabolic biomarkers for Parkinson's disease using in-depth metabolomic analysis
<b>Author</b>	wei han, shraddha sapkota, richard camicoli, roger A Dixon
<b>Journal</b>	Movement disorder
<b>Year</b>	2017
<b>Methodology</b>	Metabolomic profiling using dansylation isotope labeling liquid chromatography massspectrometry
<b>Scope</b>	The significantly altered metabolites can be used to differentiate PD patients from healthy controls with high accuracy and the stable PD with no dementia group from those with incipient dementia

**Paper- 3:**

<b>Title</b>	Medical record review to differentiate between idiopathic parkinsons disease and parkinsonism
<b>Author</b>	xin cui, naomi greene, eva schernhammer, beate ritz
<b>Journal</b>	hindawi
<b>Methodology</b>	chi-square tests,NHR
<b>Scope</b>	The electronic medical records provide new and unprecedented opportunities for large population-based and clinical studies if valid and reliable diagnoses be obtained, to determine what information is needed to distinguish idiopathic PD from Parkinsonism in electronic medical records.Thus, they Data suggest that electronic data source Need to be developed that provide Information not only on ICD codes but also on cardinal and atypical symptoms, symmetry of onset, comorbidities, and

	treatment modalities for all PD patients. To be most informative in terms of predictive validity for IPD, these data need to be used in combination and patients need to be followed up over at least 5 years into disease to improve diagnostic accuracy in studies that rely solely on record .
<b>Year</b>	2015

**Paper-4:**

<b>Title</b>	Machine learning for the diagnosis of Parkinson's disease: A systematic
<b>Author</b>	jie sei, johannas fransneli
<b>Journal</b>	Research gate
<b>Year</b>	2020
<b>Methodology</b>	Machine Learning; Diagnosis; Differential Diagnosis
<b>Scope</b>	Diagnosis of Parkinson's disease (PD) is commonly based on medical observations and assessment of clinical signs, these symptoms are often overlooked, making diagnosis of PD at an early stage challenging. To address these difficulties and to refine the diagnosis and assessment procedures of PD, machine learning methods have been implemented for the classification of PD and healthy controls or patients .the first exhaustive review which included results from all studies that applied machine learning methods to the diagnosis of PD

**Paper-5**

<b>Title</b>	Monitoring Parkinson's Disease in Smart Cities
<b>Author</b>	MUSAED ALHUSSEIN

<b>Journal</b>	IEEE
<b>Year</b>	2017
<b>Methodology</b>	cloud computing,ELM,SVM,GMM,RFT.
<b>Scope</b>	Parkinson's Disease (PD) is one of the most severe neurological diseases prevalent in the world.A neurodegenerative disease, it impairs the body's balance, damages motor skills, and leads to disorder in speech production. These problems also affect decision-making processes and the expression of emotions.

#### Paper-6:

<b>Title</b>	Machine Learning Approaches for Detecting Parkinson's Disease from EEG Analysis:A Systematic Review
<b>Author</b>	Ana María Maitín Alvaro José García-Tejedor and Juan Pablo Romero Muñoz
<b>Journal</b>	Applied science
<b>Year</b>	2020
<b>Methodology</b>	Parkinson's disease (PD);electroencephalography(EEG) machine learning (ML)
<b>Scope</b>	parkinson's disease (PD) is the second most common neurological Alzheimer's disease,Electroencephalography (EEG) is a non-invasive technique that records the electrical activity of the pyramidal neurons of the brain, giving an indirect insight of the function with a great time resolution.efficiently. These techniques are increasingly being applied to EEG analysis, facilitating the use of this low-cost clinical test to detect or extract information on various neurological diseases.it should be emphasized that ML techniques have experienced significant growth in recent years, incorporating

	more complex models, and thus, this review and the conclusions obtained herein should be considered as a first step in the analysis of the role played by ML techniques and EEG in the study of PD.
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**Paper-7:**

<b>Title</b>	Automatic Diagnosis of Parkinson's Disease Using Machine Learning
<b>Author</b>	JEANNIE HE
<b>Journal</b>	KTH VETENSKAP OCH KONST
<b>Year</b>	2021
<b>Methodology</b>	Machine learning, Feature Selection, Greedy Search, Genetic Algorithm.
<b>Scope</b>	This system was chosen as the best system for the diagnosis of Parkinson's disease based on its comparative predictive performance on two sets of data - one from drawing exams and one from voice exams.while none of the systems in this thesis have shown a significantly higher performance than all other systems in any metric, it can be stated that, amongst those systems tested in this thesis, the best system for the diagnosis of PD appears to be RFGA+ as a combination of RF, GA and random oversampling.

