

Real-time preictal detection through the  
application of machine learning to  
Electroencephalogram signals.

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March 31, 2024

Word Count: 10,000

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## **Acronyms**

**CNN** Convolutional Neural Network. 2, 5, 6

**STFT** Short-Time Fourier Transform. 2, 5, 7

## **1 Abstract**

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## **2 Acknowledgements**

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## **3 Introduction**

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### **3.1 Background**

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### **3.2 Project Aim**

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## **4 Background Review**

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### **4.1 Datasets**

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## **4.2 Methodologies**

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# **5 Project Methodology and Management**

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## **5.1 Methodology**

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### **5.1.1 Raw Data Extraction**

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### **5.1.2 Short-Time Fourier Transform (STFT)**

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### **5.1.3 Notch Filter**

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### **5.1.5 Convolutional Neural Network (CNN)**

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## **5.2 Management**

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### **5.2.1 Requirements**

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### **5.2.3 Risks**

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### **5.2.4 Possible Issues**

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## **6 Implementation**

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### **6.1 Requirement Review**

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### **6.2 Issues**

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### **6.3 Development Log**

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## **7 Implementation Results**

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### **7.1 Convolutional Neural Network (CNN) Architecture**

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## **7.2 Subject Specific Model**

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## **7.3 Subject Generic Model**

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## **7.4 Short-Time Fourier Transform (STFT) Windows**

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# **8 Conclusion**

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(Riddell 2023)

## 9 Bibliography

### References

Riddell, W. (2023), *Test Book*, British London.



## 10 Appendix