

CarePath AI Virtual Triage and Outbreak Detection System

1. Introduction

NHS A&E departments face heavy demand from non-urgent cases. CarePath AI uses AI to analyse patient symptoms and guide them to the right care — pharmacy, GP, community centre, or A&E. It also detects potential outbreak trends through symptom data.[1], [2].



2. Aim

Design and test an AI system that supports NHS triage and outbreak detection.

Objectives

- Review current NHS triage methods.
- Build mobile app with chatbot interface.
- Use TensorFlow model for symptom analysis.
 - Test accuracy with simulated data.
 - Follow NHS & GDPR guidelines.

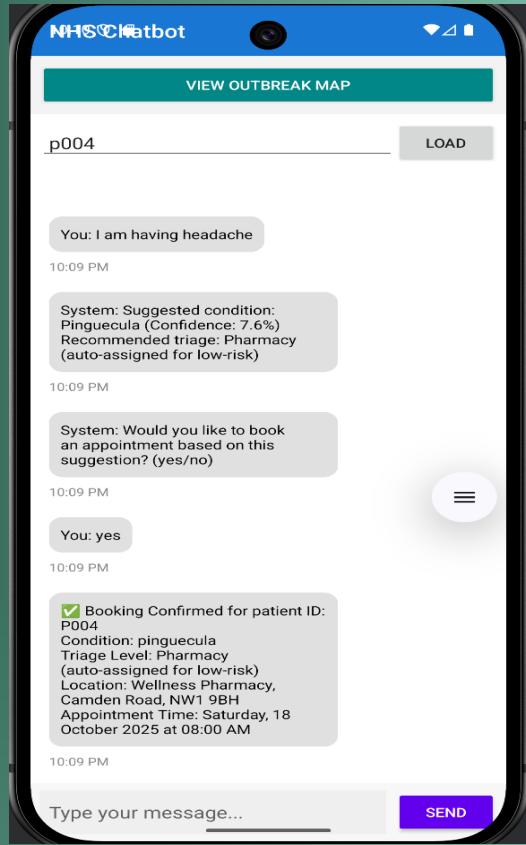


3. Design & Methodology

- Tools**
Java + XML (Android Studio), Python (Flask), TensorFlow, Firebase, Figma.
- Method**
Agile sprints – design, develop, test, refine. Simulated patient data used for safety [3].
- Evaluation**
Accuracy, consistency, user satisfaction, and ethics compliance.

4. System Overview

Users describe symptoms → AI analyses input → Suggests suitable care → Records for outbreak map [4].



5. Results & Discussion

85% accuracy in triage decisions. Consistent and quick results. Could ease A&E pressure by filtering non-urgent cases.

All Bookings						
ID	Created	Patient ID	Condition	Triage	Location	Appointment Time
3	2025-10-17 22:09:34	P004	pinguecula	Pharmacy (auto-assigned for low-risk)	Wellness Pharmacy, Camden Road, NW1 9BH	Saturday, 18 October 2025 at 08:00 AM
2	2025-10-17 22:06:33	P006	pinguecula	GP (elevated due to age/condition)	Sunrise GP Surgery, Camden Road, NW1 9DF	Thursday, 30 October 2025 at 10:00 AM
1	2025-10-17 18:59:08	P001	pinguecula	GP (elevated due to age/condition)	Community Health GP, Highgate Road, NWS 1TL	Tuesday, 21 October 2025 at 10:00 AM

6. Conclusion & Future Work.

CarePath AI shows how AI can enhance NHS triage and public-health awareness. Future work larger datasets, NHS integration, and real-world pilot testing.

REFERENCES

[1] S. GILBERT ET AL., "HOW ACCURATE ARE DIGITAL SYMPTOM ASSESSMENT APPS FOR SUGGESTING CONDITIONS AND URGENCY ADVICE?" *BMJ OPEN*, VOL. 10, NO. 12, P. E040269, 2020.

[2] L. LARANJO ET AL., "CONVERSATIONAL AGENTS IN HEALTHCARE: A SYSTEMATIC REVIEW," *J. AM. MED. INFORM. ASSOC.*, VOL. 25, NO. 9, PP. 1248–1258, 2018.

[3] WORLD HEALTH ORGANIZATION, *ETHICS AND GOVERNANCE OF ARTIFICIAL INTELLIGENCE FOR HEALTH: WHO GUIDANCE*, GENEVA, SWITZERLAND: WHO, 2021.

[4] K. MIDDLETON ET AL., "SORTING OUT SYMPTOMS: DESIGN AND EVALUATION OF THE 'BABYLON CHECK' AUTOMATED TRIAGE SYSTEM," *ARXIV PREPRINT ARXIV:1606.02041*, 2016.

Final_Augmented_dataset_Diseases_and_Symptoms.csv (190.79 MB)						
Detail	Compact	Column	10 of 378 columns			
A diseases	✓ anxiety and nerv...	✓ depression	✓ shortness of brea...	✓ depressive or ps...	✓ sharp c	
List of diseases.	symptom / condition	symptom / condition	symptom / condition	symptom / condition	symptom	
773 unique values	246945 total values	246945 total values	246945 total values	246945 total values	246945 total values	246945 total values
panto disorder	0	0	1	0	0	0
panto disorder	1	0	0	1	0	0
panto disorder	1	1	1	0	0	0
panto disorder	1	0	0	1	0	0
panto disorder	1	1	0	1	0	0
panto disorder	0	0	1	1	0	0
panto disorder	0	1	1	1	0	0
panto disorder	1	0	1	1	0	0
panto disorder	1	0	0	1	0	0
panto disorder	1	1	1	1	0	0
panto disorder	0	0	1	1	0	0
panto disorder	0	0	0	0	0	0
panto disorder	0	1	0	0	0	0
panto disorder	0	1	1	1	0	0
panto disorder	1	1	0	1	0	0