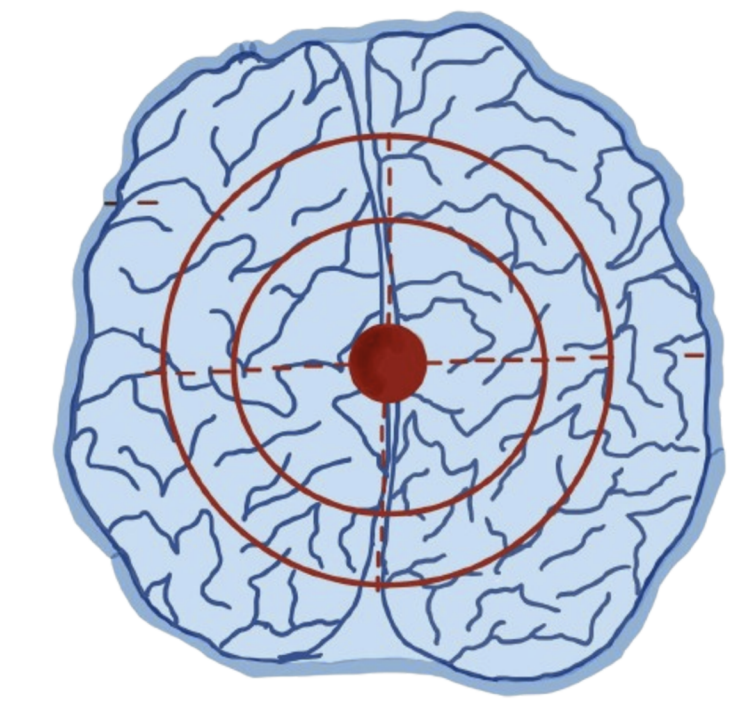


# STROKESCOPE

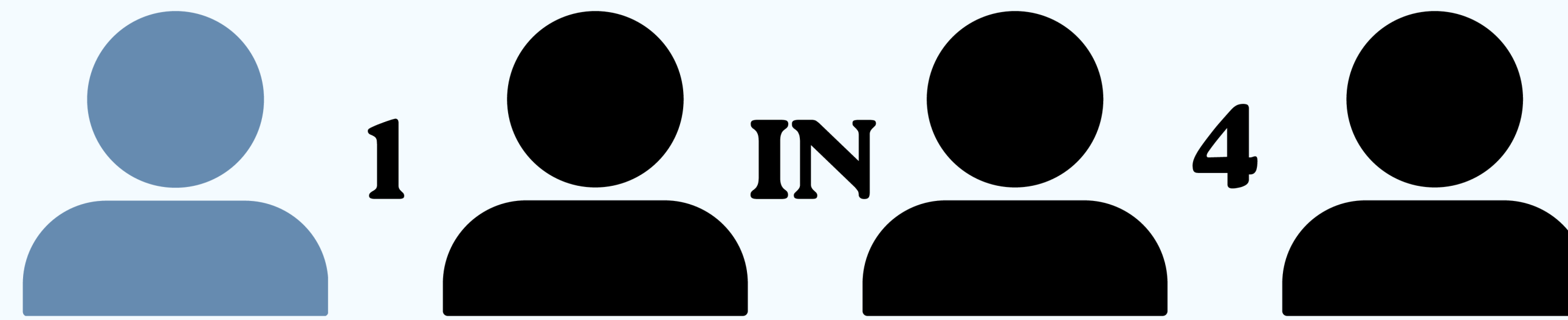
AN AI-POWERED CT ANALYSIS TOOL FOR EARLY SCAN ANALYSIS



## TARGET AUDIENCE

- GENERAL PUBLIC WITHOUT KNOWLEDGE/TIME TO ANALYZE SCANS
- STUDENTS LOOKING TO EXPERIMENT WITH MACHINE LEARNING & CT SCAN ANALYSIS
- HEALTHCARE CENTERS WITHOUT ACCESS TO IMAGING SOFTWARE

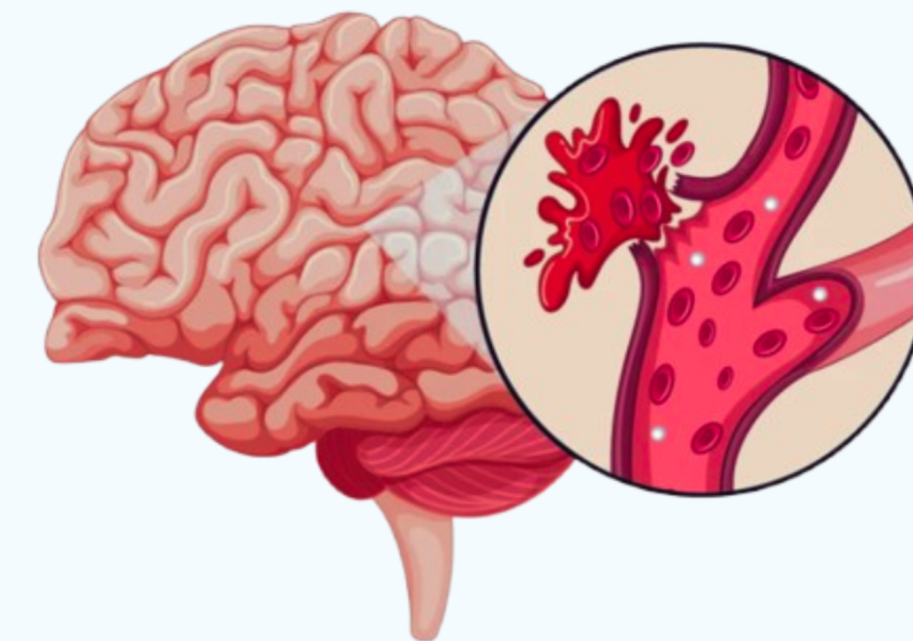
## STROKE IS ONE OF THE LEADING CAUSES OF DEATH GLOBALLY



EXPERIENCE A STROKE ABOVE THE AGE OF 25

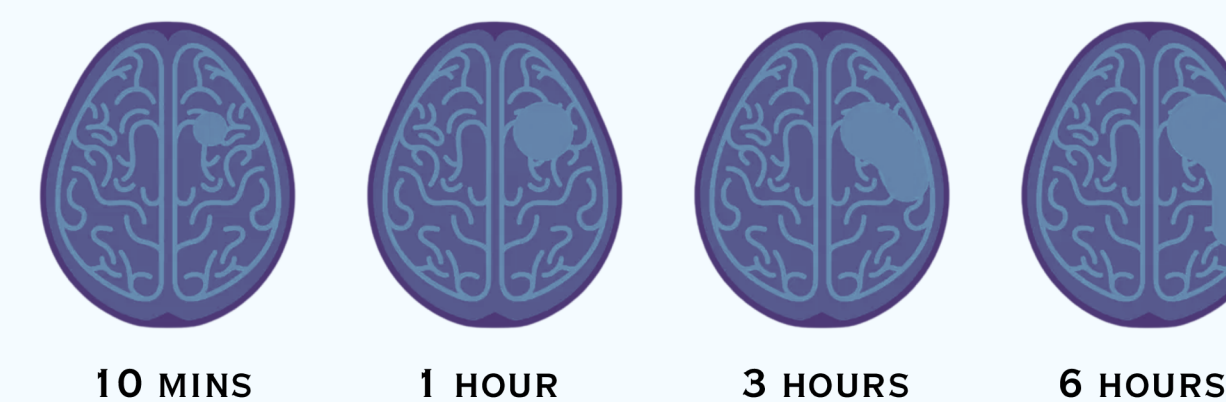
LONG WAIT TIMES, LIMITED ACCESS TO SPECIALISTS, AND FINANCIAL BARRIERS JEOPARDIZE PATIENTS' HEALTH

### HEMORRHAGIC STROKES

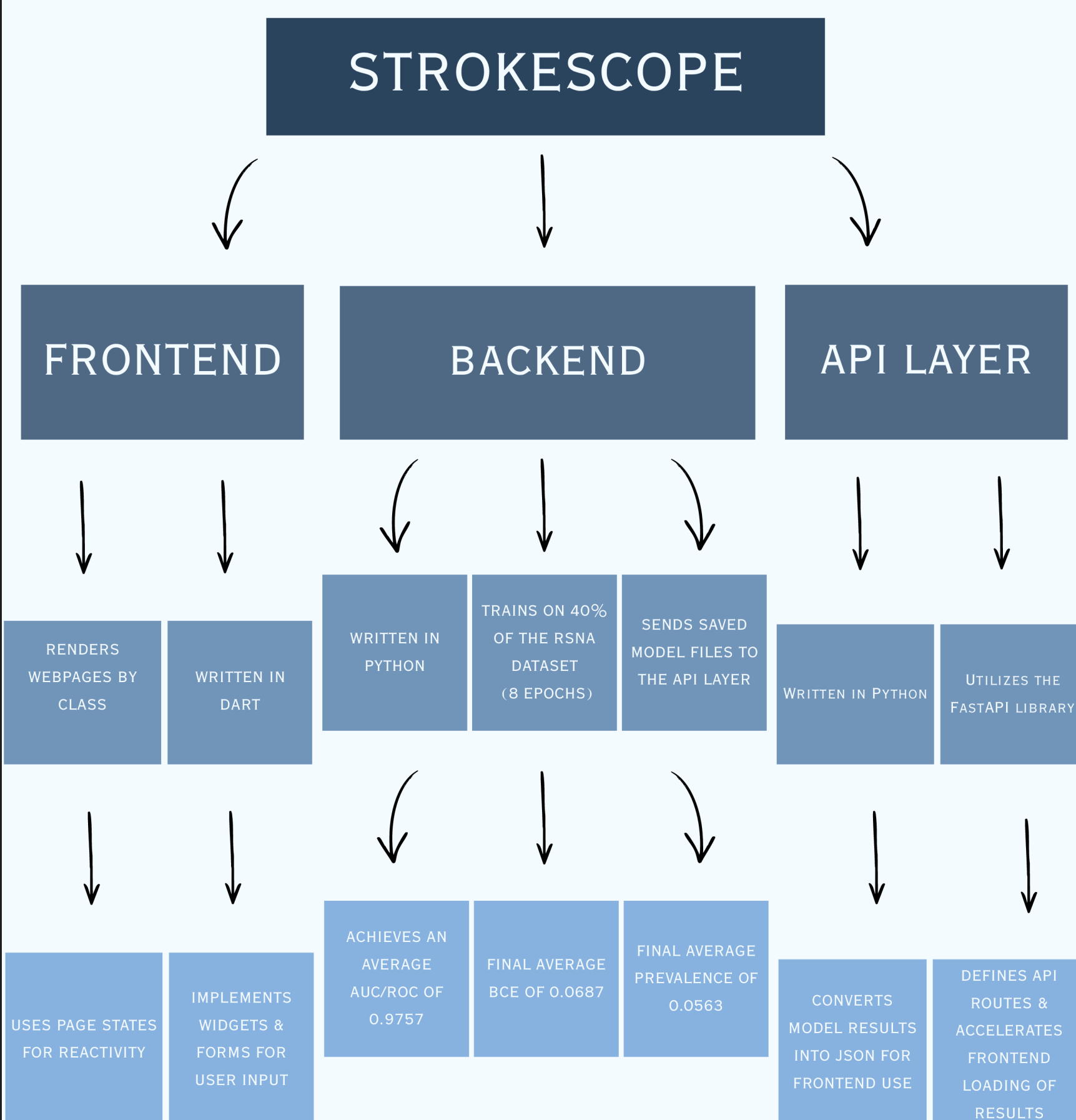


WEAKENED AND BURST BLOOD VESSELS THAT CAUSE BLEEDING & PRESSURE IN THE BRAIN, WHICH DESTROY BRAIN TISSUE

EVERY MINUTE A STROKE GOES UNTREATED, THE BRAIN CAN LOSE AN ESTIMATED 1.9 MILLION NEURONS



## SOFTWARE ARCHITECTURE



## PROJECT SPECIFICATIONS

**STROKE DETECTION:** THE APPLICATION WILL USE A CONVOLUTIONAL NEURAL NETWORK TRAINED ON PUBLICLY AVAILABLE IMAGING DATASETS TO ANALYZE THE SCAN AND CLASSIFY A HEMORRHAGE AS PRESENT OR NOT

**IMAGE PROCESSING:** USERS WILL BE ABLE TO UPLOAD CT BRAIN SCANS TO THE APPLICATION. THE SYSTEM WILL HANDLE NORMALIZING AND IMAGE PREPROCESSING PRE-ANALYSIS.

**DISPLAYING RESULTS:** THE APP WILL INDICATE WHETHER A HEMORRHAGE IS PRESENT, DISPLAY THE MODEL'S CONFIDENCE LEVEL, AND HIGHLIGHT PROBLEMATIC AREAS. ADDITIONALLY, THE APP WILL RECOMMEND THE NEXT STEPS FOR THE USER TO TAKE.

## RESULTS



## FUTURE EXTENSIONS

- EXPANDED MRI INPUT
- AUTHENTICATION & SESSION HISTORY — LOG IN AND SEE YOUR PAST UPLOADS AND RESULTS
- PERSISTENT CROSS-SESSION STORAGE — YOUR DATA STAYS SAVED EVEN AFTER YOU CLOSE THE APP
- HOSPITAL DATASET PORTAL — ACCOMMODATES PACS
- FAMILY STROKE RISK MODELING — USES FAMILY HISTORY TO PREDICT STROKE PRESENCE
- 3D BRAIN RECONSTRUCTION — SEE THE BRAIN IN 3D WITH THE DAMAGED AREAS HIGHLIGHTED