

NeuroSignal Interview App

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The Problem

Traditional interviews measure only verbal responses.

Cognitive load and stress during interviews are invisible — but measurable.

EEG can reveal physiological signals that words do not.

What We Built

A real-time biosignal analysis app that runs live interview sessions.

- Streams EEG from an OpenBCI headset
- Transcribes speech live via browser microphone
- Scores stress and cognitive load for the interviewee in real time
- Displays per-channel EEG confidence across 8 nodes

How It Works

1. Interviewer and interviewee speak — browser mic captures audio
2. Speech-to-text captions are logged to a transcript table
3. OpenBCI headset streams EEG to a local Flask backend
4. Backend processes EEG windows (~1 second intervals) and scores cognitive load
5. Scores update live on the frontend dashboard
6. Session ends → summary exported

Architecture

Hardware

OpenBCI headset → serial/LSL stream

Backend (Python / Flask)

EEG ingestion → signal processing → scoring API

Frontend (Web)

Speech-to-text · transcript table · live score panels

Key Features

- Role assignment: Auto Detect, Interviewer, or Interviewee
- Scoring restricted to Interviewee + OpenBCI data source only
- 8-channel node confidence scores per utterance
- Session summary with export to JSON
- Works on desktop and mobile browsers
- Configurable API endpoint — point frontend at any backend URL

Built at Neurohackathon 2026

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Allen Institute for Neural Dynamics

UW Center for Neurotechnology

UW Synaptech