# COMP3000 Computing Project 2024/2025

### KANO: A Mood Analysis Voice Journal

### Links

Source code:[*https://github.com/Esther-Skillman/KANO-A-Mood-Analysis-Voice-Journal*](https://github.com/Esther-Skillman/KANO-A-Mood-Analysis-Voice-Journal)

### Project Vision

The clients are for those who have an interest in their own emotional wellbeing, journaling and embrace new technologies involving AI. With these core characteristics, the intended clients’ demographics would be largely age 16-25, with their increasing usage of AI technologies, and existing members of the journaling community, allowing for an easy integration of their current journaling habits to the niche that is voice journalism with mood analysis. Culture would likewise be English speaking and the same as the one represented in the dataset(s) used. Other demographics such as gender, economic and social class are intended to not impact the client target audience, but this could be revised later during research and development.

The problem addressed is an individual’s inability to conduct an unbiased reflection of one of their many emotional expressions, in this case, speech. Whilst the common method of reflection for today is writing, these entries can be written over, once, twice or even three times with technology, obscuring a person’s true emotions to how they think they should feel as opposed to what they actually feel. Voice entries help remove this obscurity, as individuals can’t ‘rewrite’ their speaking as easily, providing a raw entry of sorts but likewise adds a significant key benefit of listening to not only what they say but HOW they say it. Whilst humans are able to discern the emotions of speech with minimal effort, such as anger, happiness or fear, this can fall short when they’re the ones analysing themselves. The process can become bias, thrown behind the lens of their own perspective and this is when technology can intervene - providing an unbiased report to aid an individual in their own reflection.

KANO, a mood analysis voice journal, will be a mobile application that uses AI to discern the emotions of a person’s voice. A user will record themselves speaking and the AI will conduct a live analysis after they’ve finished, giving numerical and qualitative feedback on what emotions the user displayed during the voice entry. The AI will be produced with an agile development framework under the research field of SER (Speech Emotion Recognition) with machine learning and deep learning. Whilst the client-side application will be done with android studio and compatibility with android and iPhone will be explored. The main purpose of the application is to be a tool for a user’s mental wellbeing, as they’re able to reflect on an unbiased and numerical picture of the emotions they portray. This will enable them to approach their mental health with a more objective viewpoint and keep a record of their complex emotions over time.

### Risk Plan

|  |  |  |
| --- | --- | --- |
| Risk Plan | | |
| Ref | Potential Risk | Mitigation Strategies |
| R1 | Unrealistic Time Estimates | Incremental development, tutor feedback, analysis of past work ethic/projects, multiple time estimation techniques, revision of schedule after MVP has been achieved |
| R2 | Personnel shortfalls | Tutor teaching and resources, training via online courses, university support e.g. writing cafe |
| R3 | Missed deadlines for development | Schedule contingency time for possible overruns, requirements revision, assess critical path, revise and extend schedule for similar developments |
| R4 | Personnel unexpected event (illness etc.) | Schedule potential sick days, assess impact to critical path, tutor meeting to evaluate next steps |
| R5 | Software doesn’t meet requirements | Prototyping, tutor feedback, consistent evaluation of requirements during development, software research |
| R6 | Software doesn’t meet user/client expectations | user testing and feedback (UAT), prototyping, alpha testing with MVP |
| R7 | Gold plating | Assess design time-cost, prototyping, requirements scrubbing |
| R8 | Development too technically challenging | Technical analysis with tutor feedback, technical training, requirements scrubbing |

Computational power and speed

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| --- | --- | --- | --- | --- |
| Risk Plan | | | | |
| Ref | Risks | Likelihood | Impact | Risk Exposure |
| R1 | Unrealistic Time Estimates | 5 | 4 | 20 |
| R2 | Personnel shortfalls | 4 | 3 | 12 |
| R3 | Missed deadlines for development | 4 | 5 | 20 |
| R4 | Personnel unexpected event (illness etc.) | 3 | 3 | 9 |
| R5 | Software doesn’t meet requirements | 3 | 4 | 12 |
| R6 | Software doesn’t meet user/client expectations | 2 | 4 | 8 |
| R7 | Gold plating | 4 | 2 | 8 |
| R8 | Development too technically challenging | 4 | 3 | 12 |

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| --- | --- | --- | --- | --- | --- |
| Risk Assessment Matrix | | | | | |
|  | 1 | 2 | 3 | 4 | 5 |
| 1 |  |  |  |  |  |
| 2 |  |  |  | R7 |  |
| 3 |  |  | R4 | R2 R8 |  |
| 4 |  | R6 | R5 |  | R1 |
| 5 |  |  |  | R3 |  |

### Proposed Gantt chart

*Identify here your proposed work packages and how they will fit together over the time you have available. This is a high level estimate.*

### Keywords

voice, speech, SER, journal, dairy, mental health, healthcare, mood, analysis, AI, machine learning, deep learning, pattern recognition, mobile application, android