

Key Gestures: Gesture-Based Password Authentication

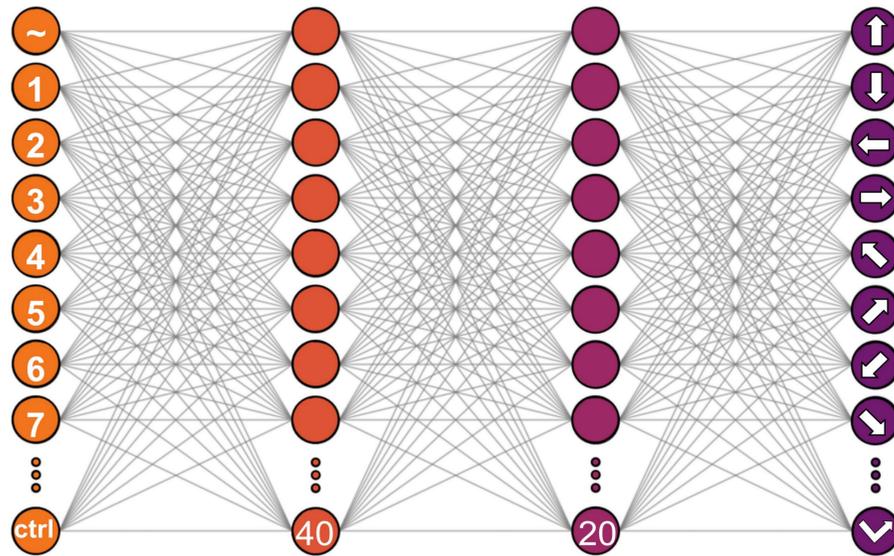


I. Project

Traditional keyboard-based password input is not accessible for everyone

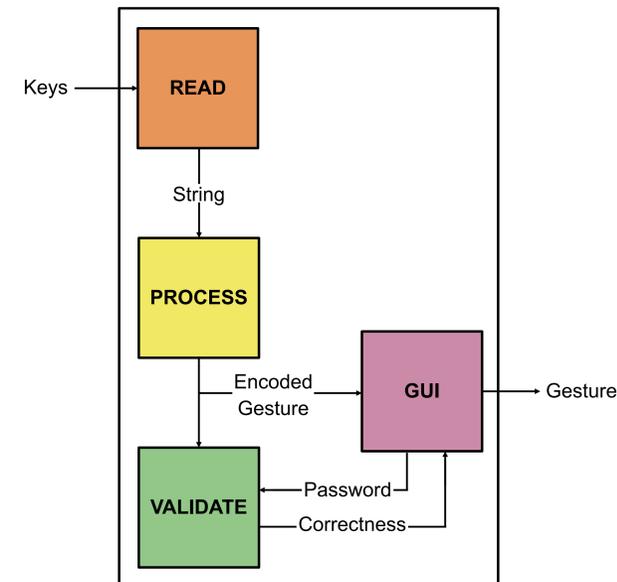
Key gestures solves this by:

- Utilizing easy password creation/entry for those lacking finger dexterity
- Requiring no extraneous hardware
- Providing a user friendly and low maintenance option

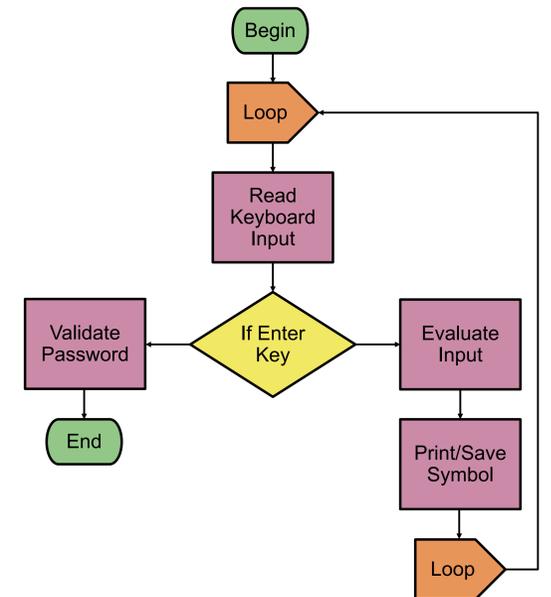


II. System

Functional Block Diagram



Software Design Diagram



III. Methods

Reading User Input

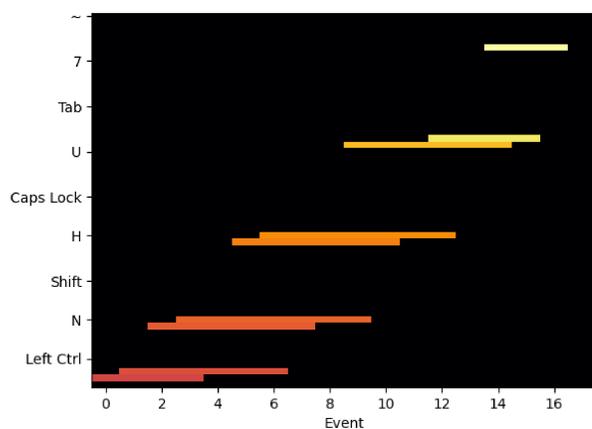
- 58 elements – each element belonging to a single key
- Each element given score from 0 to 1 representing sequence

Neural Network Processing

- Input: 58 keys
- Output: 10 gestures
- Pytorch implementation
- Trained with 9000 inputs

Graphical Display

- Demonstration and password mode
- Real-time display
- User customization



IV. Conclusion

Results

- Accepts and correctly interprets inputs from all QWERTY keyboard layouts
- Recognizes 10 gestures with 93.7% accuracy

Future Work

- Full OS integration
- More accurate gesture representation
- Custom gesture encryption

