Criterion E: Evaluation

Success criteria from my project proposal

1. The identification model can be queried over an HTTP server running on localhost rapidly and without error.

   The product meets this criterion. An image is sent to the model via POST request and an array of floating point numbers in JSON format is returned.

2. The REST API can be queried over an HTTP server rapidly and without error.

   It was not necessary to create an API in the end. The HTTP server can be queried rapidly and without error. All data the user may need to request is available.

3. The web app is accessible and functional, allowing user uploads and giving responses to queries from the client.

   A server can easily be set up by following the instructions in the README of the repository on Github. From there the app is accessible in the browser. Email registration is required to make queries.

Suggestions for further improvement

1. A mobile app would make the solution more effective and intuitive, as opposed to a desktop website.
2. The program doesn't have a proper web server. If someone wanted to actually use remotely (not on localhost), they'd have to set up a domain name, get an SSL certificate, and get the program properly serving data from a remote machine. This requires way more work and know-how than can reasonably be expected from the end user.

3. Renting a larger processor to train the AI on could greatly improve its performance (since a larger network trained on more data over more iterations would become feasible).
4. It would probably improve the UI and make it easier to expand upon if it was built using a Javascript framework such as Angular. As of now, the frontend contains no JS.
5. Currently the program uses sqlite for its database. Sqlite is primarily designed for development, and using it in production can cause errors and is slower than using a proper database. Migrating to MySQL could improve speed and prevent any errors that might arise as the app needs to scale.
6. Setting up additional user functionality, such as two-factor authentication, password reset, and user deletion could make the app more secure and more convenient.
7. Using third-party scripts for compatibility with single sign-on systems used by school districts could make it more convenient and may even be necessary to meet the security requirements of schools that might want to use it.

Client feedback

When interviewed, Mr. Rice said that the app would be better if the evaluation page, which currently just produces a ranked list of candidates, also displayed numerical values for how confident it was about each choice. I told him that producing relative probabilities would be very easy, but producing some absolute measure of confidence would be very hard (due to the nature of the algorithm), and he said that that option would still be a great improvement. His general sentiment was that the UI needed to be more self-explanatory. Other than that, he was impressed by the demo I gave him, which used data from the original dataset (none of which was data used for training). He said the Windows 95 theme was “very 1995.”