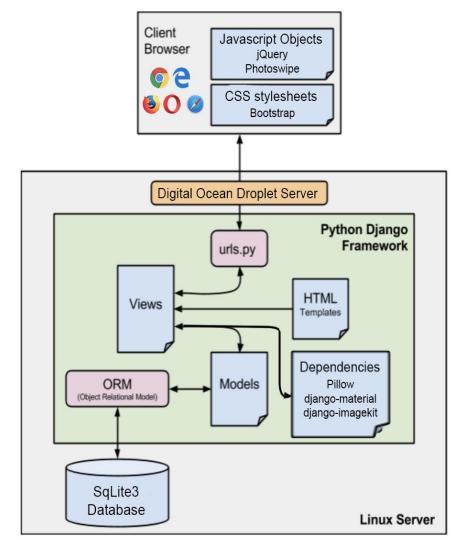


User Classification ZC files, login info Register Main Login GUI -Allow login-Upload ZC to CSV ZC files-Bin to PNG CSV -list[PNG, classification]-Database API -user credentials-Pulse cleaner user info _user data-Database PNG to Authenticator _binary__▶ Query maker int[][] Webserver Binary -list[binary, classification]-**Image** generator Query Data list[PNG] Data cleaning list[PNG, classification] Database Train/Test CNN -Training Data-Neural Network CNN Dev ←Feedback → Restore CNN

Overall System Model

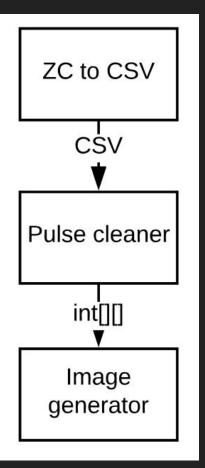


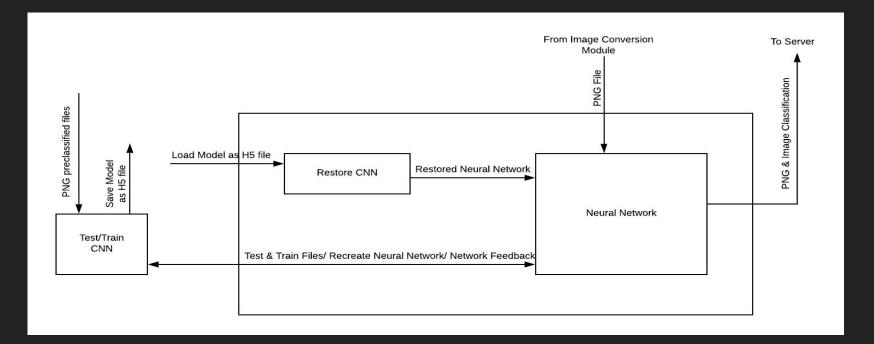
Connection from web to database

Database GUI CNN web-server Classified PNG image Classified PNG image Username, password from sign-in Database API PNG-to-binary Authentication converter check Classified binary data Data request Classified binary data from SELECT query Query maker INSERT query w/ binary data SELECT query Login info-Database -New user registration credentials--SELECT guery-SELECT query result

Database API

Pulse Processing





- Added Test/Train CNN to the diagram above
- Preliminary models showed high accuracy but bad predictions
- Researched information about other models
- Decided to make the convolutional and pooling layers by hand using their math formulas
- Resulting model showed higher accuracy with greatly improved predictions.

CNN

Subsystems Analysis

CNN - O(n)

Registration page - O(1)

Zero-crossing file analysis - O(n)

Database API operations - O(log n)

Overall system:

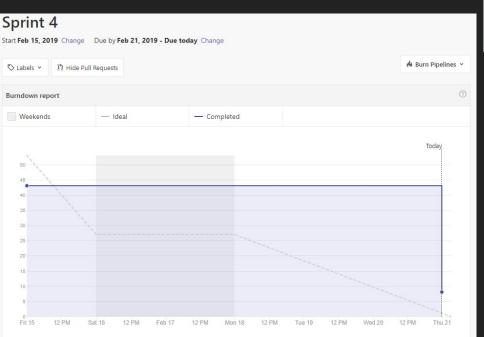
O(n)

Your Company Name

Scrum Sprint 4

53 Total Story Points

45 Completed / 8 Remaining



Remaining Issues and Pull Requests Story points File Analysis GUI - Intro Bat_Echolocation_2019 #31 III Backlog TSprint 4 Completed Issues and Pull Requests Story points (F) Implement data classification code help wanted (10) Bat_Echolocation_2019 #12 ||| Closed † Sprint 4 (F) Improve database API diagram help wanted (10) Bat_Echolocation_2019 #30 III Closed † Sprint 4 Create data classification code help wanted (10) Bat_Echolocation_2019 #32 III Closed TSprint 4 Classify 25,000 observations - 1 help wanted (15) Bat_Echolocation_2019 #34 III Closed TSprint 4

