**CyberShield AI**

**Common Features for both Admin and User:**

* Registration and Login – with email ID (verified) and password
* Malware anomaly Detection & 2 stage Classification –
  + Upload a file input
  + Run detection using the hybrid AI model:
    - Autoencoder → Reconstruction error check.
    - If low error: Binary RF → Malware or Benign.
    - If malware: Detailed classification via Malware-Type RF.

**User Specific Features**

* **Downloadable Detection Report**
  + Export scan results as:
    - **PDF** (formatted, shareable report)
    - **CSV** (raw data for analysis)
* **Scan History Logging**
  + View list of all scans performed in the **last 7 days**.
  + Shows scan time, result, classification, and option to download a past report.

**Admin Specific Features**

1. **Dataset Access & Management** 
   * Access to the full CIC-MalMem2022 dataset (samples and labels).
   * **Add new records** (upload clean/labelled data).
   * **Delete or modify existing records** (data cleaning or pruning).
2. **Model Re-Tuning** 
   * Trigger re-training of the AI model after dataset changes.
   * Update autoencoder and both Random Forest classifiers.
   * See training progress and metrics (accuracy, loss, etc.).
3. **Admin Dashboard – Dataset and training related information provider**
   * Visual insights into the dataset and model performance:
     + Malware vs. benign distribution.
     + Malware types breakdown.
     + Sample count trends.
     + Top features used in classification.
     + Last retrain date and model stats.

**Figma Screen Map – Cyber Shield AI**

**🔐 Authentication Flow (Shared by User & Admin)**

1. **Landing Page**
   * Welcome message
   * Buttons: Login | Register
2. **Registration Page**
   * Name, Email, Password, Confirm Password
   * Role Selection: User (default), Admin – through admin access key
   * Register Button
3. **Login Page**
   * Email, Password
   * Login Button
   * Register Button

**🧑 User Dashboard**

1. **Home / Dashboard**
   * Welcome, Username
   * Upload Area (drag & drop file / paste input)
   * Run Detection Button
   * Recent Scan Summary (last result)
2. **Scan Result Page**
   * Classification: Benign / Malware
   * If Malware → Type: e.g., Trojan, Ransomware
   * Reconstruction Error & Confidence Scores
   * Download PDF | Download CSV
   * Back to Dashboard
3. **History Page**
   * Table/List View (Last 7 Days):
     + File name | Date & Time | Result | Type | Download Link

**👨‍💼 Admin Dashboard (All User Pages + Extra)**

1. **Admin Home**
   * Same as User Home
   * Additional card: Dataset Summary (Sample count, last retrain, etc.)
2. **Dataset Management Page**
   * View dataset table (pagination)
   * Buttons: Add Sample, Delete, Edit Label
   * File Upload Modal for new records
3. **Retrain Model Page**
   * Edit model parameters
   * Button: Start Re-Training
   * Show: Spinner/Progress Bar
   * After training: Show updated stats (accuracy, precision, etc.)
4. **Admin Analytics Dashboard**
   * Pie Chart: Malware vs. Benign
   * Bar Chart: Malware Types
   * Line Chart: Scans Over Time
   * Table: Recent Model Versions

**🔧 Common UI Elements**

* Top Navigation Bar:
  + Dashboard, Scan History, Upload, Logout
  + If Admin: Dataset, Retrain, Analytics
* Sidebar (optional):
  + Collapse/expand menu
  + Role indicator (User/Admin badge)
* Toasts or Alerts:
  + For detection success, file upload error, login issues, etc.