

EPI-USE AFRICA
Assessment

User manual

By Ibrahim Said



Overview:

Key Discussion Points

This application is an organizational management system that can be used to manage employees (CRUD), view hierarchy tree structures of the organization, and restrict user access based on employee roles. It features React and Tailwind for the frontend, Node.js (Express) for the backend, and Prisma (PostgreSQL) for the database storage. The system is able to support employee crud, and includes charts that allow live searches and customized nodes. The system also includes PDF credential generation for first time users, CSV import and export, and robust admin controls.

Table of Contents:

1. [Getting started](#)
2. [User Roles](#)
3. [Key Features](#)
4. [Using the application](#)
5. [Admin Features](#)
6. [Troubleshooting](#)
7. [Conclusion](#)

Getting started

Each component of the system was deployed independently and then integrated to form the complete application. The Prisma-managed database was hosted on Supabase and connected to the backend. The backend API was then deployed on Railway, and finally, the frontend was deployed on AWS Amplify to bring everything together into a unified, fully functional system.

URL links to the project:

Web-Application URL: [Click here!](#)

Login Access:

- Email: bemosaid3@gmail
- Password: Bemo123!

User roles:

Admin: An admin can create, update, delete, and promote employees. An admin can also reassign subordinates and access all features to the application.

Viewer: A viewer is able to view the organization chart as well as the employee directory. Viewers can also view their own profiles and make changes to their personal information and passwords.

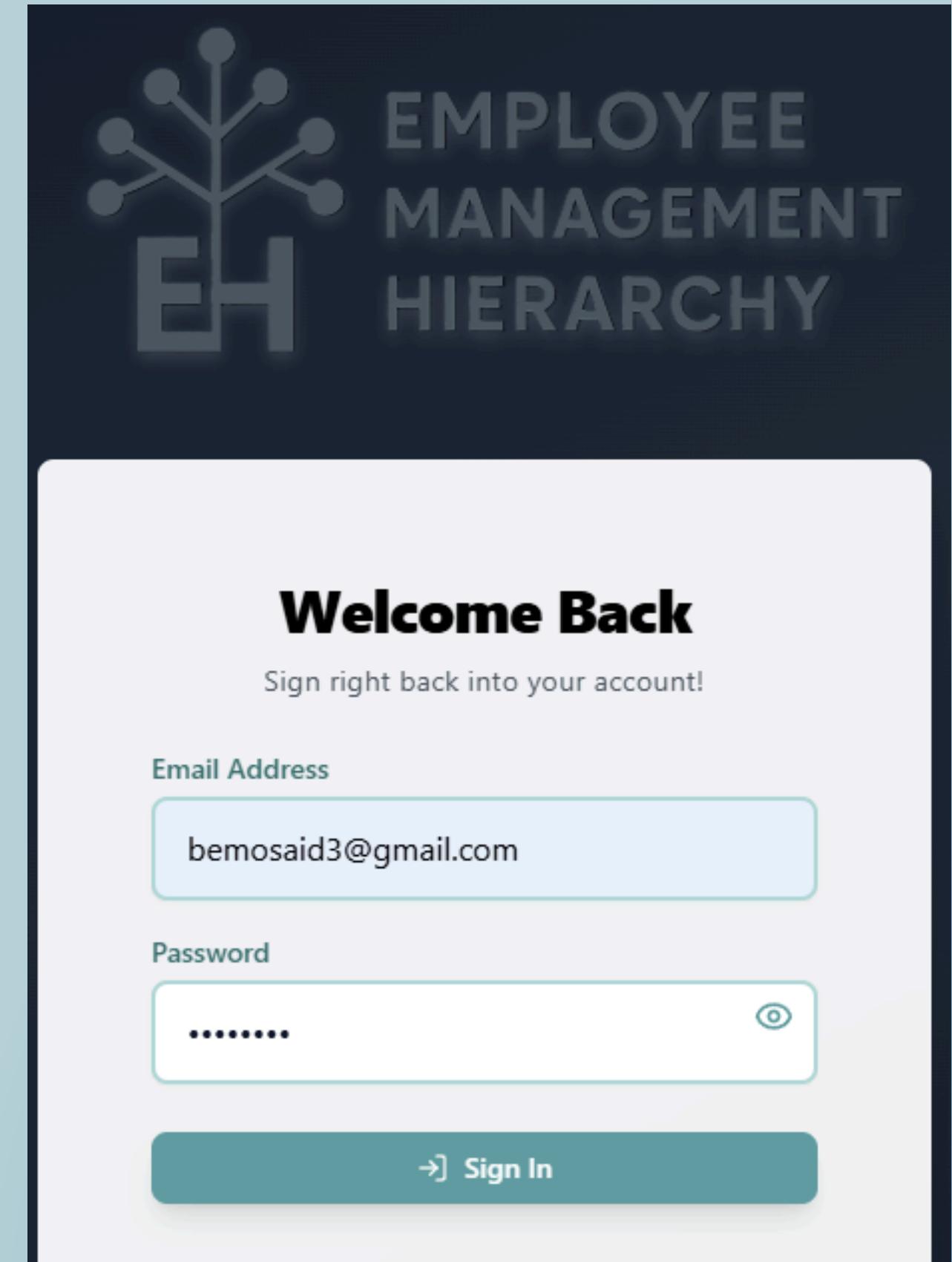
Key Features:

- Employee CRUD (Creating, Reading, Updating and Deleting of employees)
- An organization chart that allows for a tree view of the entire company hierarchy.
Allows for live searching, as well as filtering.
- Gravatar integration for personal information and profile images.
- JWT tokens for added security.
- Protected Routes.
- Secure Authentication using Supabase.
- PDF Credential generator for new employees.
- CSV import and export for bulk employee management and backup.
- Role-based access control.
- Robust CORS and environmental variable handling for production.
- Deployment and scalability.
- Error handling and validation
- Responsive and modern UI.

Use of the application

Login and registration

- Access the login page and enter your credentials which are provided by an admin user (if it is a user's first time) or simply log right back in.
- For new user registration, an admin must first sign in to the system and create a new employee account. Once the account is created, the admin provides the new user with their credentials, either through a text message or by generating a PDF credentials document.



Use of the application

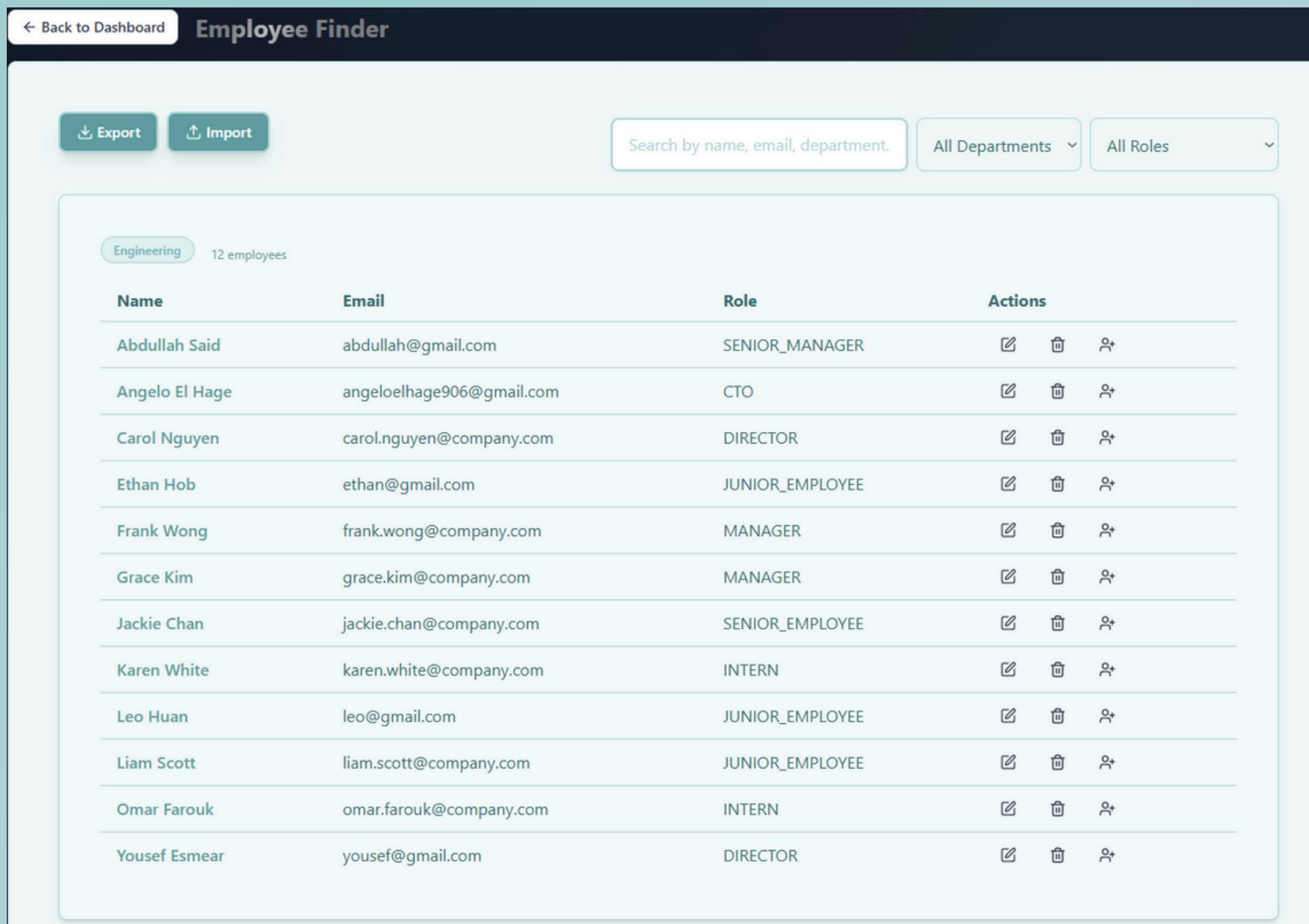
Dashboard

The screenshot shows the 'Employee Hierarchy' dashboard. At the top right, it says 'Ibrahim (ADMIN)' and has a 'Logout' button. On the left, a sidebar titled 'Employee Overview' lists: 'Total Employees' (25), 'Departments' (4), and 'Top Managers': Frank Wong (MANAGER), System Administrator (CEO), and Bob Smith (DIRECTOR). In the center, there's a 'Recent Activity' section showing: 'Your Email' (bemosaid3@gmail.com), 'Your Role' (System Admin), and 'Latest Hires' (Angelo El Hage (CTO) on Oct 24, Abdullah Said (SENIOR_MANAGER) on Oct 23, Some Guy (TEAM LEAD) on Oct 23). Below that is an 'Account Settings' button. At the bottom of the dashboard, there are three main buttons: 'Employee Finder' (View Employees), 'Organization Tree' (View Hierarchy), and 'Add New Employee' (Add Employee).

- This page is the central hub of the system where a user is able to quickly access key features such as viewing employee details, managing records, and view the organizational tree.
- User access levels determine available functionality, Admins have full control, including creating, editing, and deleting records, while Viewers have limited, read-only access to ensure data integrity and security.

Use of the application

Employee Directory



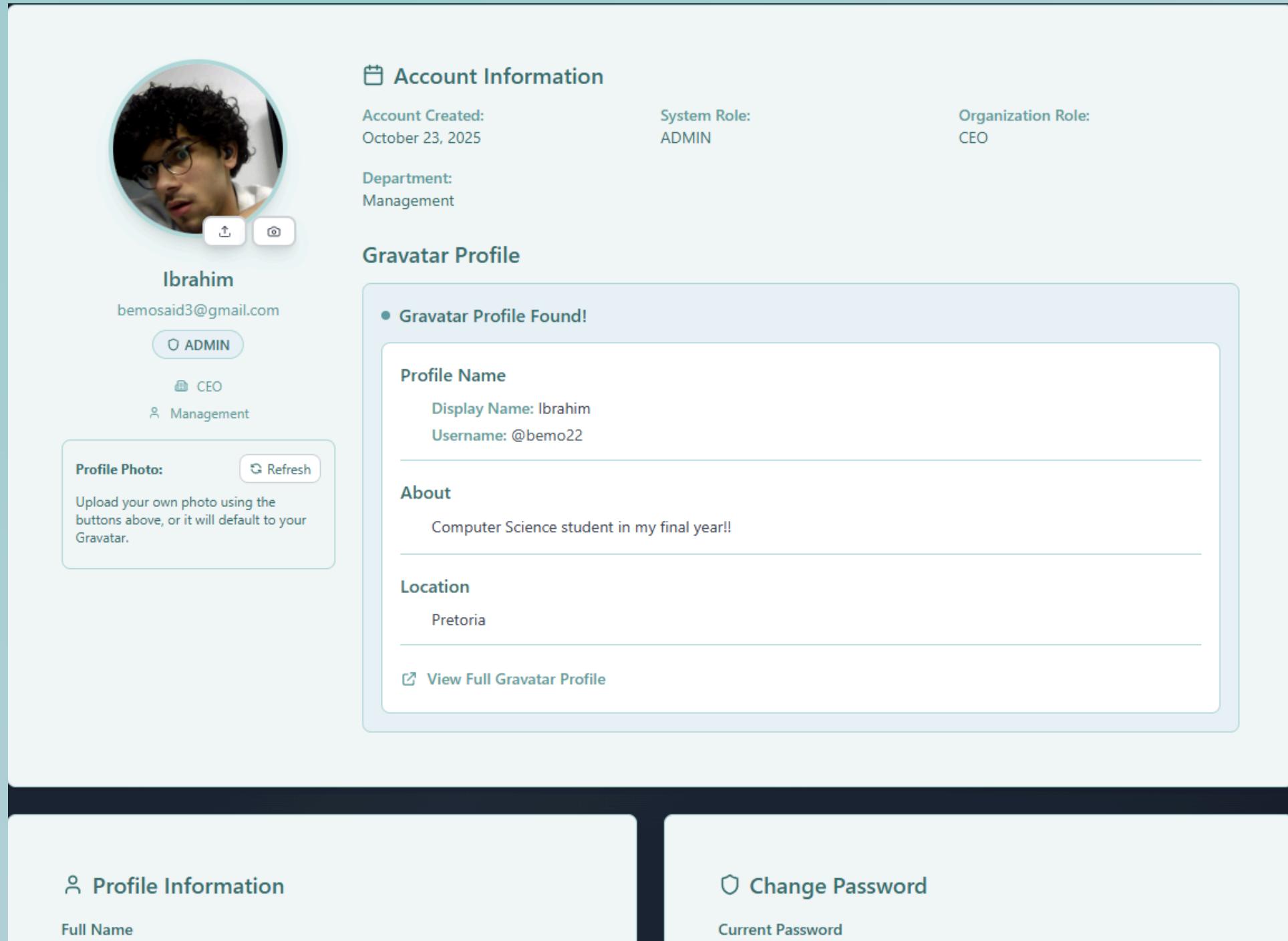
The screenshot shows the 'Employee Finder' application. At the top, there is a navigation bar with a 'Back to Dashboard' button and the title 'Employee Finder'. Below the navigation bar are two buttons: 'Export' and 'Import'. To the right of these buttons is a search bar labeled 'Search by name, email, department.' and two dropdown filters: 'All Departments' and 'All Roles'. The main area displays a table titled 'Engineering' with '12 employees'. The table has columns for 'Name', 'Email', 'Role', and 'Actions'. Each row contains an employee's name, their email address, their role, and three small icons in the 'Actions' column. The employees listed are Abdullah Said, Angelo El Hage, Carol Nguyen, Ethan Hob, Frank Wong, Grace Kim, Jackie Chan, Karen White, Leo Huan, Liam Scott, Omar Farouk, and Yousef Esmear.

| Name | Email | Role | Actions |
|----------------|---------------------------|-----------------|---------|
| Abdullah Said | abdullah@gmail.com | SENIOR_MANAGER | |
| Angelo El Hage | angeloelhage906@gmail.com | CTO | |
| Carol Nguyen | carol.nguyen@company.com | DIRECTOR | |
| Ethan Hob | ethan@gmail.com | JUNIOR_EMPLOYEE | |
| Frank Wong | frank.wong@company.com | MANAGER | |
| Grace Kim | grace.kim@company.com | MANAGER | |
| Jackie Chan | jackie.chan@company.com | SENIOR_EMPLOYEE | |
| Karen White | karen.white@company.com | INTERN | |
| Leo Huan | leo@gmail.com | JUNIOR_EMPLOYEE | |
| Liam Scott | liam.scott@company.com | JUNIOR_EMPLOYEE | |
| Omar Farouk | omar.farouk@company.com | INTERN | |
| Yousef Esmear | yousef@gmail.com | DIRECTOR | |

- Browse through all the employees in a grid view.
- Click on employees to view their information card. If the employee's email is connected to gravatar, then the profile image as well as gravatar information (e.g. bio) will also be displayed.
- User is able to use the search bar and filters to filter by name, department, and role.
- Allow for importing and exporting of CSVs. Any errors and duplicates are reported.

Use of the application

Account settings



The screenshot shows the 'Account Information' section of a user profile. It includes a circular profile picture of a man with glasses, a name 'Ibrahim', an email 'bemosaid3@gmail.com', and two roles: 'ADMIN' and 'CEO'. Below this, there's a 'Profile Photo:' section with a placeholder message. The 'Gravatar Profile' section displays a message 'Gravatar Profile Found!' with fields for 'Profile Name' (Display Name: Ibrahim, Username: @bemo22), 'About' (Computer Science student in my final year!!), and 'Location' (Pretoria). A link 'View Full Gravatar Profile' is also present. At the bottom, there are links for 'Profile Information' and 'Change Password'.

- User is able to view their Gravatar profile (if it exists), if a Gravatar profile is not found, instructions will be provided on how to create an account and link it to your email.
- User is able to change profile picture by either uploading an image or directly taking a picture off of their device.
- Personal information can be updated, such as name and email address.
- Password changes are done on this page, especially for first time users changing their temporary password.

Use of the application

Adding a new Employee

- Admins are able to create new users via the provided form.
- Set new employee information, and assign a manager to the new employee. The manager defaults to the person adding the employee but it can be changed.
- Once a user is created, a temporary password is generated which can be downloaded as a PDF and sent to the new employee.
- An option to create another employee will reset the form if clicked to allow for easy access back to the form.
- Employee hierarchy is in place so that no self assignment can take place.
- The admin cannot create an employee of higher ranking than that of their provided role. (e.g. a manager cannot create a CTO)

The screenshot shows a user interface for adding a new employee. At the top right is a teal circular icon with a white document symbol. Below it is the title "Add New Employee" in teal, followed by the subtitle "Create a new employee record in the system". A yellow callout box contains the text "Role Hierarchy: You can only create employees at or below your organizational level." The form consists of several input fields arranged in a grid:

| Employee Number | Role |
|----------------------|------------------------------|
| Auto-generated | JUNIOR EMPLOYEE |
| First Name | Last Name |
| Birth Date | |
| yyyy/mm/dd | 50000 |
| Email | Phone Number |
| employee@company.com | 0743501557 |
| Department | Engineering, HR, Sales, etc. |
| Manager | System Administrator (CEO) |

At the bottom left is a white button labeled "Back to Dashboard" with a left arrow icon. At the bottom right is a teal button labeled "Create Employee" with a plus sign and a person icon.

Use of the application

Tree Hierarchy



- Users are able to view a visual representation of the company's hierarchical structure, allowing for users to easily understand the relationship between departments and individual employees.
- Users are able to search within the tree to quickly locate specific employees, this is done by tracing reporting relationships.

Admin Features

- Only admins can create, update, or delete employees.
- Only admins can promote employees to a higher role.
- Admins are able to fire subordinates.
- Admins can reassign subordinates once a manager is fired.
- All sensitive actions require authentication.

Troubleshooting

- **CORS error**: Ensure that the backend allows requests from your frontend domain (see CORS config in app-backend)
- **API Errors**: Check that the backend URL is correctly typed in the environment variables.
- **Login Issues**: Confirm email and password are correct and that password follows the correct criteria. Contact admin if locked out.
- **CSV import/export errors**: Ensure CSV matches required format and that no duplicates are present.

Conclusion

- This system is designed to provide a streamlined and secure platform for managing employee information and organizational structure. By following the guidelines in this manual, users can efficiently navigate the system, access relevant features, and maintain accurate records.
- If you experience any technical issues or unexpected behavior, please contact system administrator for assistance.