

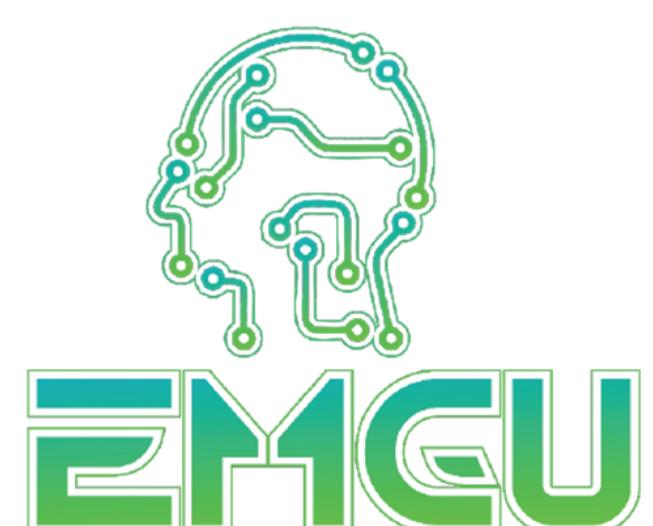
Bouldering Pathfinding

personalized solutions for climbers

Climb Smarter and Progress Faster

The primary goal of our application is to provide personalized climbing routes to users, helping beginner boulderers improve their climbing technique by following optimized move sequences. Through an intuitive and user-friendly interface, our application enhances the indoor climbing experience, making it more accessible and enjoyable for all.

Technologies Used



What It Does

Given a picture of an indoor bouldering wall, all holds of a user-specified color are identified. These holds are then passed into our A* algorithm, which runs a search for each limb, picks the lowest cost move for each step, and displays the final path to the user.

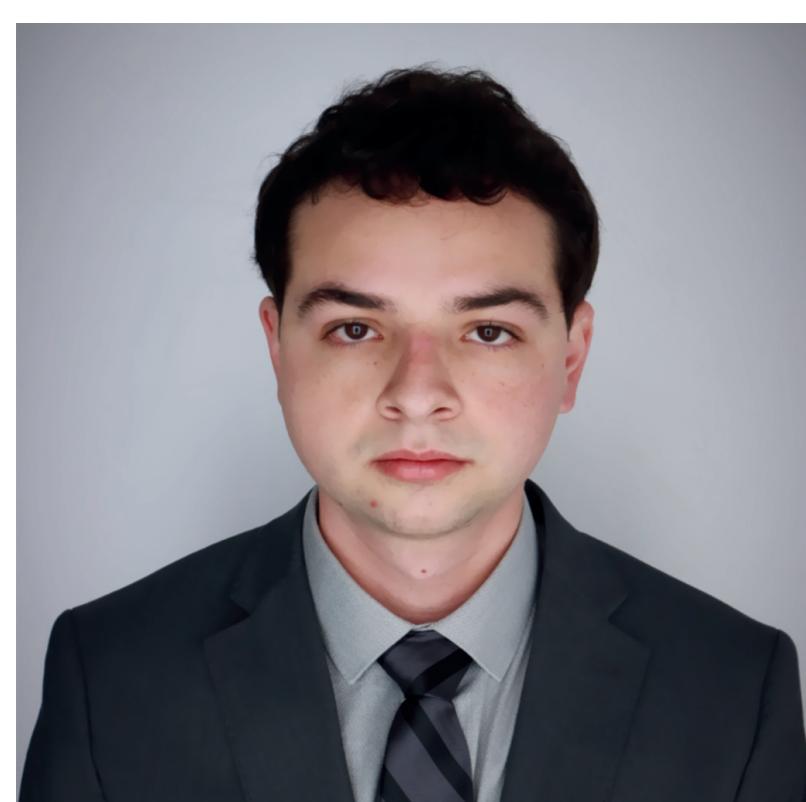
How It Works

- Users can provide their height and wingspan on their profile page.
- Users provide an image of a bouldering wall and selects the desired hold color.
- Emgu CV blob detection finds and selects the appropriate holds.
- Users provide start and end hold details, route length, and optionally hold difficulty types.
- A* pathfinding receives these inputs, estimates costs of the possible moves for each limb, and picks the lowest cost move of all limbs by round until the end hold is reached.

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