



# BotBlocker

Your Voice Matters. Don't Let AI Drown It Out

Milestone 2

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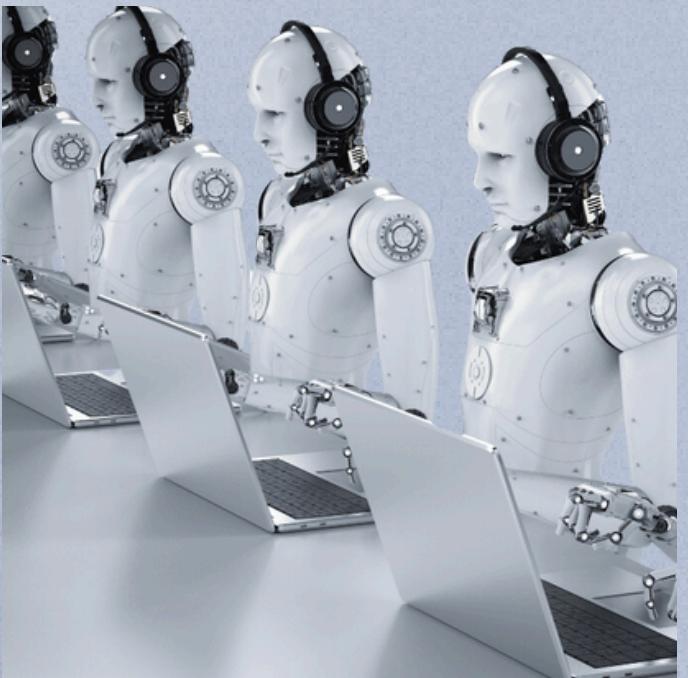
Advisors:

Prof. João Rafael Almeida  
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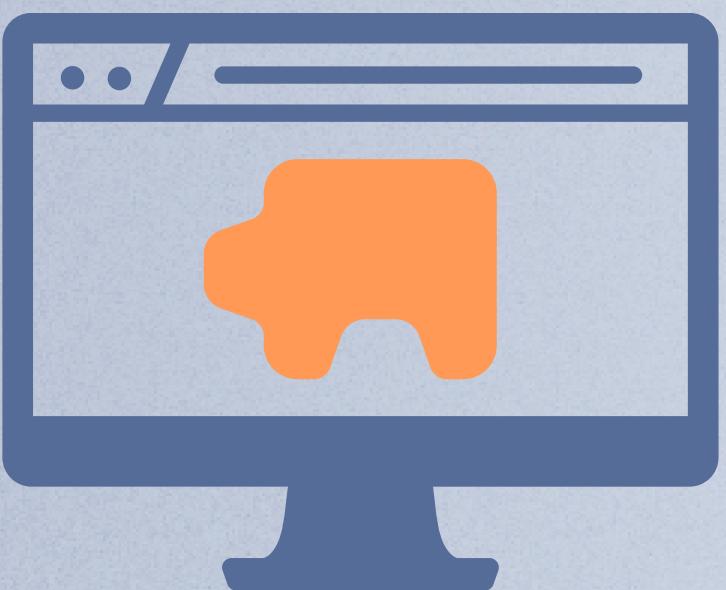
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# INTRODUCTION



## AI Bots

Manipulating engagement  
and spreading  
misinformation.



## Website + Extension

Detect and block interactions  
with AI profiles.



## Detection and Blocking

Identifying AI-driven  
accounts for transparency.

# NON-FUNCTIONAL REQUIREMENTS



## Performance

- Response time < 2s
- 10,000 simultaneous users



## Security

- OAuth 2.0 authentication
- Encryption of data



## Maintenance

- Modular and well-documented code



## Reliability

- Minimum 95% accuracy in bot detection by verifiers



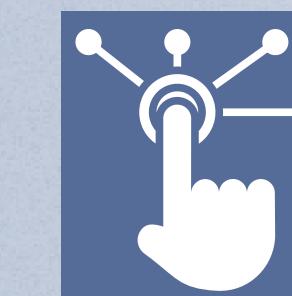
## Legality

- Clear terms of service and privacy policy



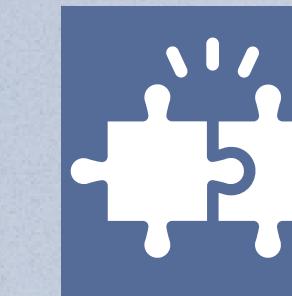
## Availability

- 99.9% uptime
- Recovery from failures < 5min



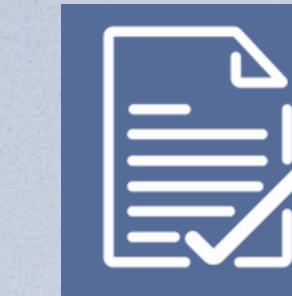
## Usability

- Intuitive and accessible interface (WCAG 2.1 compliant)



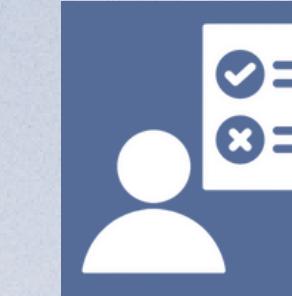
## Compatibility

- Compatible with Chrome
- Must integrate the most popular social media platforms



## Extensibility

- Well-documented APIs for future integrations

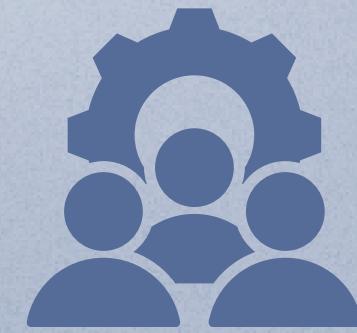


## Testability

- Automated tests covering 80% of the code.
- Usability testing with at least 20 users.

# FUNCTIONAL REQUIREMENTS

## User management



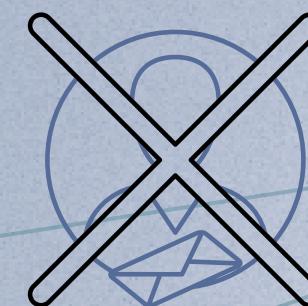
- Register & login.
- Admins = full verifier access.
- Role-based permissions.
- Admins can change roles.

## Bot Detection



- "Bot" or "Not Bot."
- Community-based scoring.
- Evaluation history.
- Alerts for high vote activity.
- Verification seals.

## Blocklists



- Personal blocklists.
- Global blacklist.
- Auto-block high-risk profiles.

## Chrome Extension



- Evaluate profiles on social media.
- Display profile scores.
- Custom filters for profiles.
- Block accounts directly.
- Login/create account in extension.

## Monitoring



- Suspend accounts (admins).
- Remove evaluations (admins).
- Ban accounts (admins).
- View suspicious activity logs.
- Alerts for suspicious patterns.

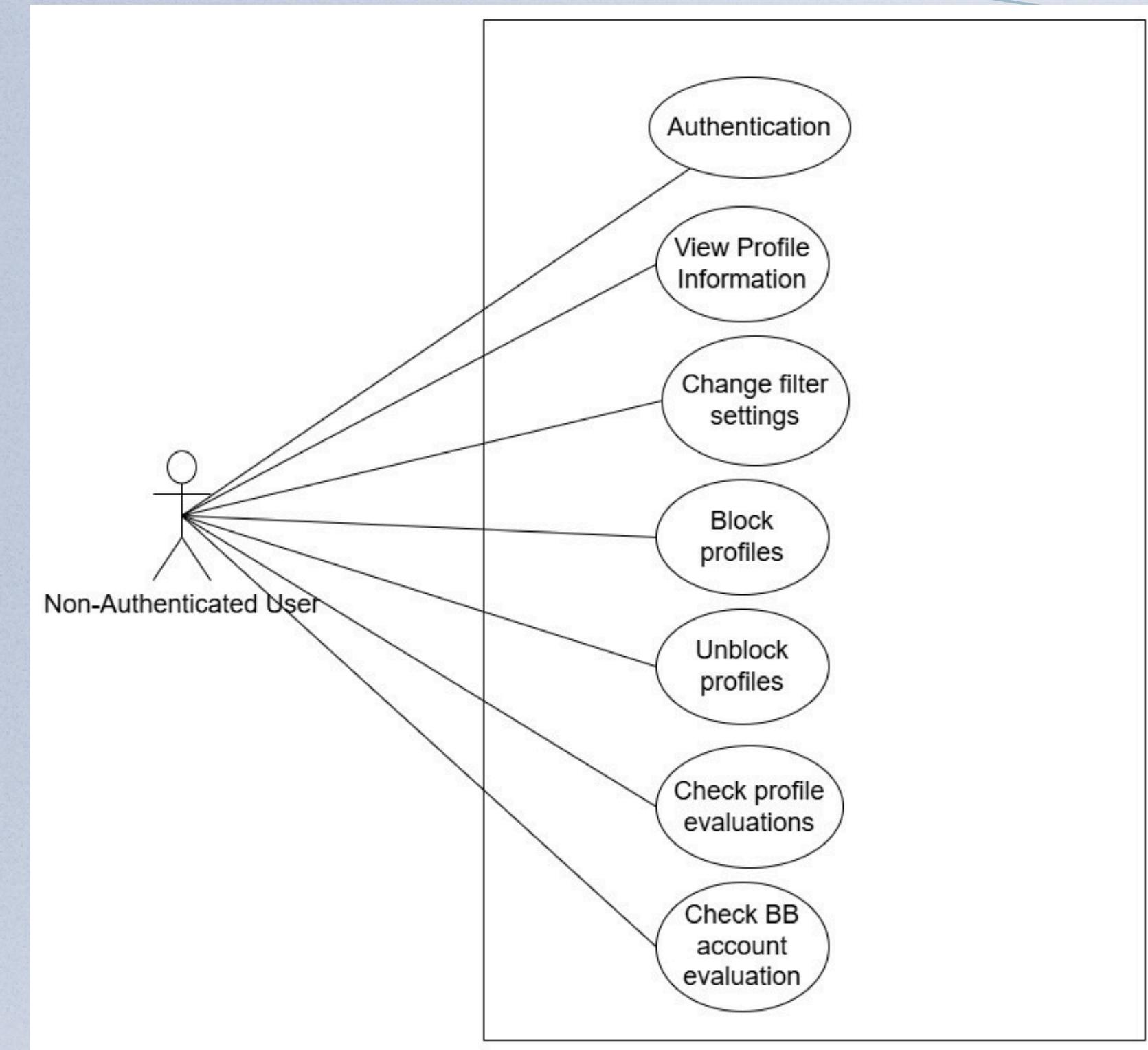
# THE STATE OF RELATED WORK

CRITERION	 <b>PEGABOT</b>	 <b>LIVEDUNE</b>	 <b>Bot Sentinel</b>	 <b>BotBlocker</b>
<b>Main Social Network</b>	Twitter/X	Multiple Social Networks	Twitter/X	Multiple Social Networks
<b>User Interaction</b>	None	None	Score Display	Community Voting & Feedback
<b>Blocking Management</b>	Not Available	Not Available	Reliability Score	Personal & Community Blocklists
<b>Accessibility</b>	Free	\$15,30/month for 5 accounts	Free	Free and open to contributions
<b>Main Advantages</b>	Ease of use, free access	Artificial Engagement Identification	High accuracy in identifying manipulative profiles	All of the before + Comprehensiveness, active user participation, integration with multiple networks
<b>Main Limitations</b>	Currently inactive	Focus only on influencers and advertising	Restricted to Twitter/X; does not detect neutral bots	None of the before
<b>Focus of Analysis</b>	Behavior and Profile Features	Engagement and Audience Authenticity	Toxicity and Coordinated Manipulation	Bot Networks, Misinformation, and Coordinated Attacks

# USE CASES

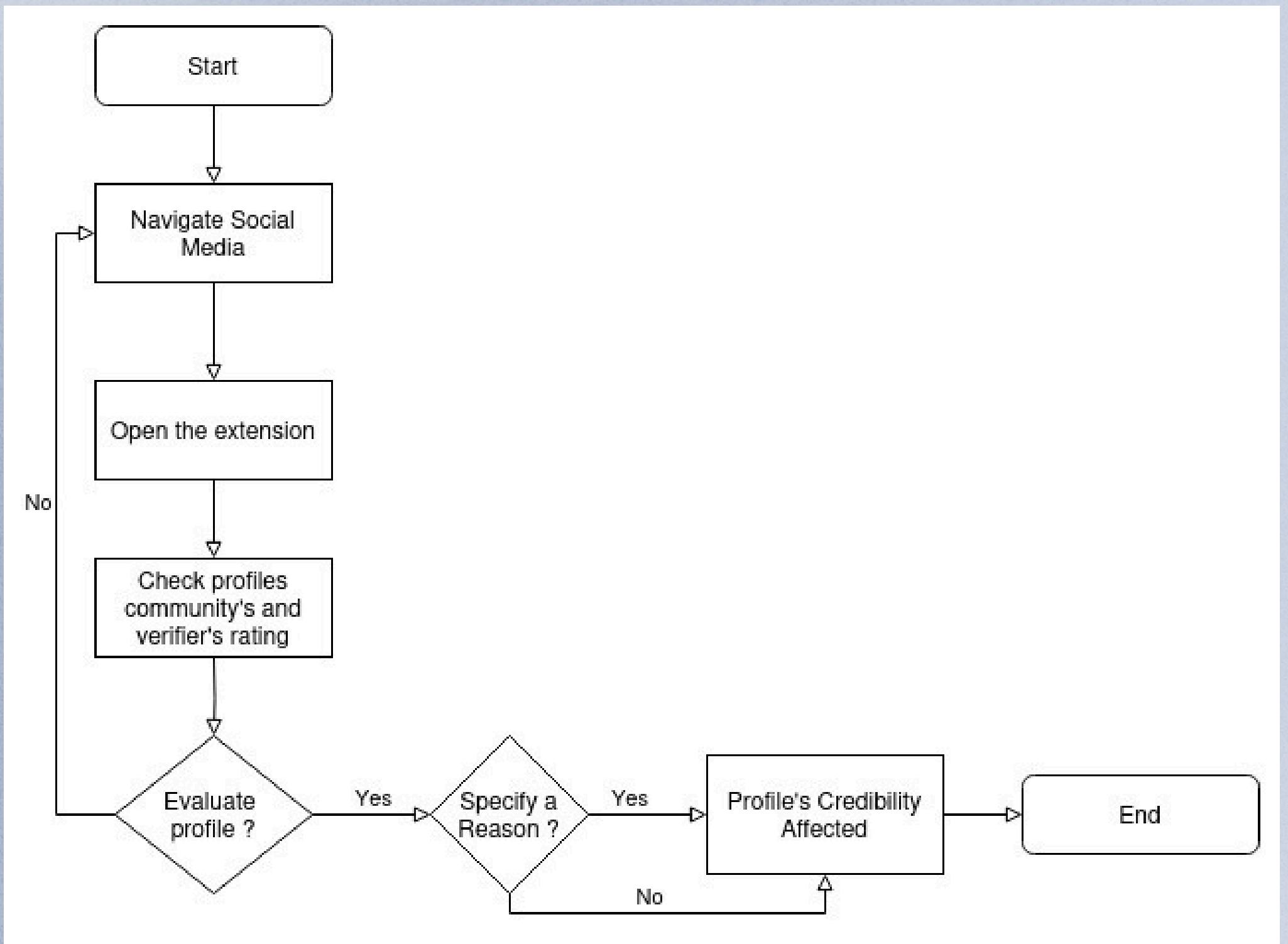
## Actors

- Authenticated user
- Non-authenticated user
- Verifier
- Admin



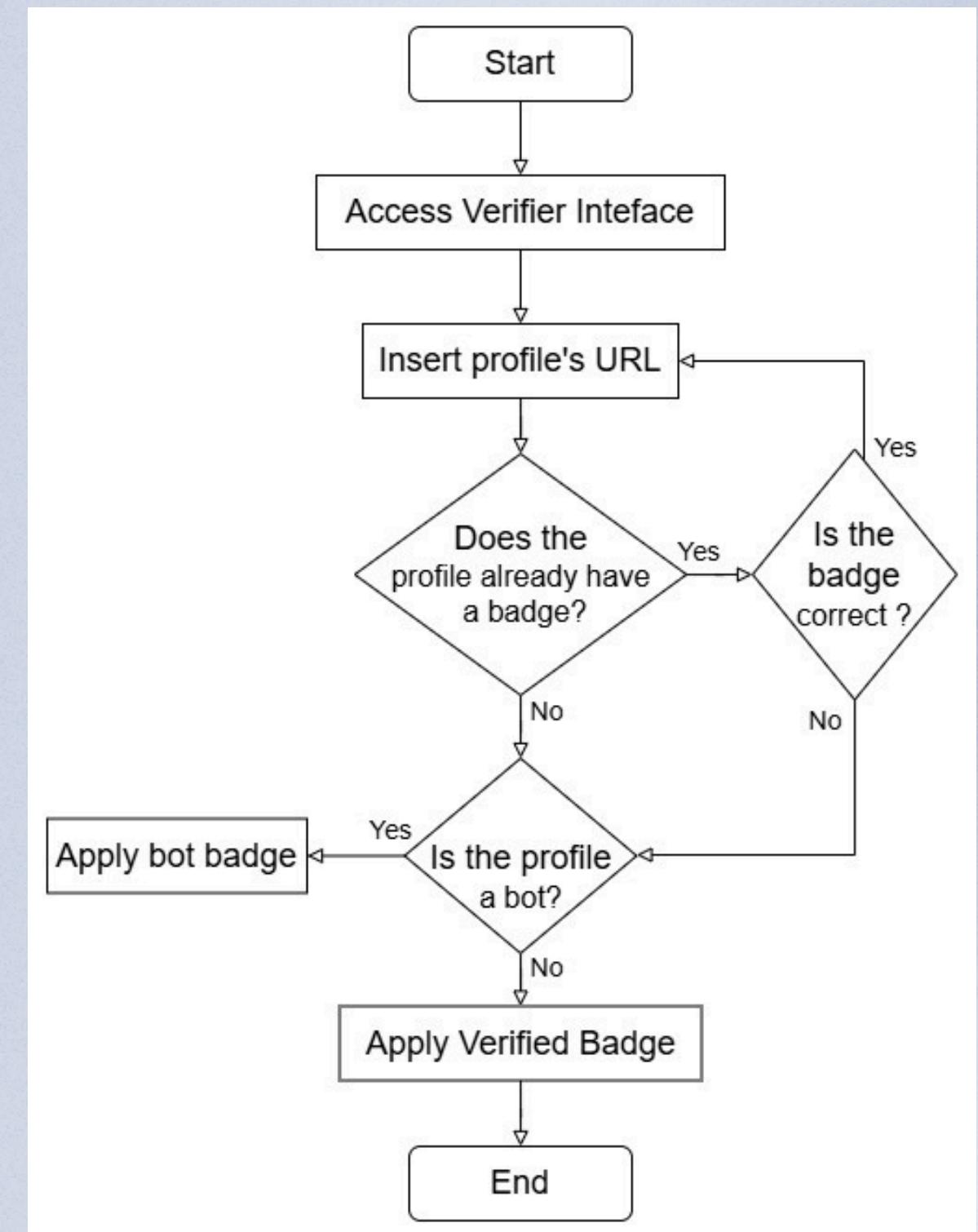
# UC1

## Authenticated User

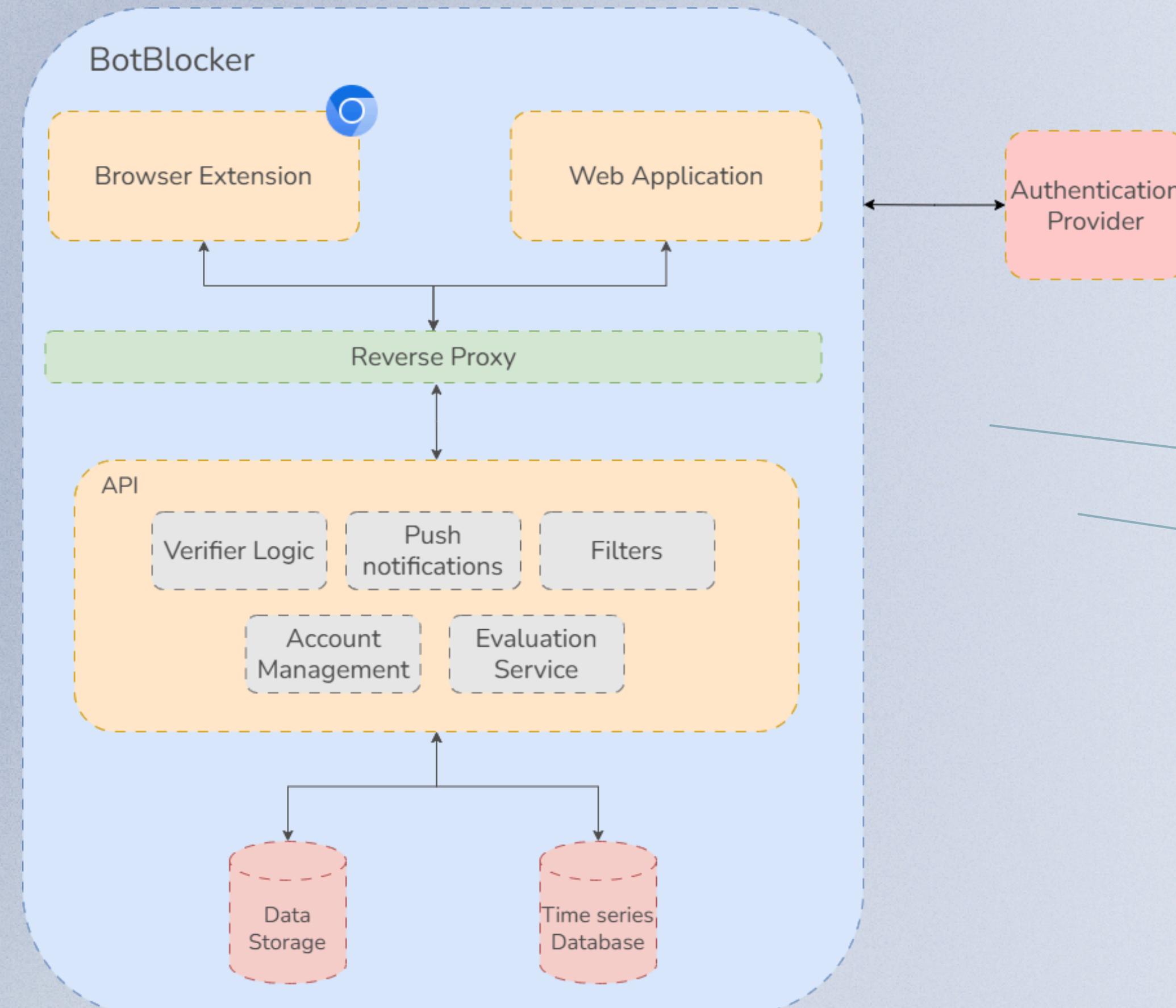


# UC2

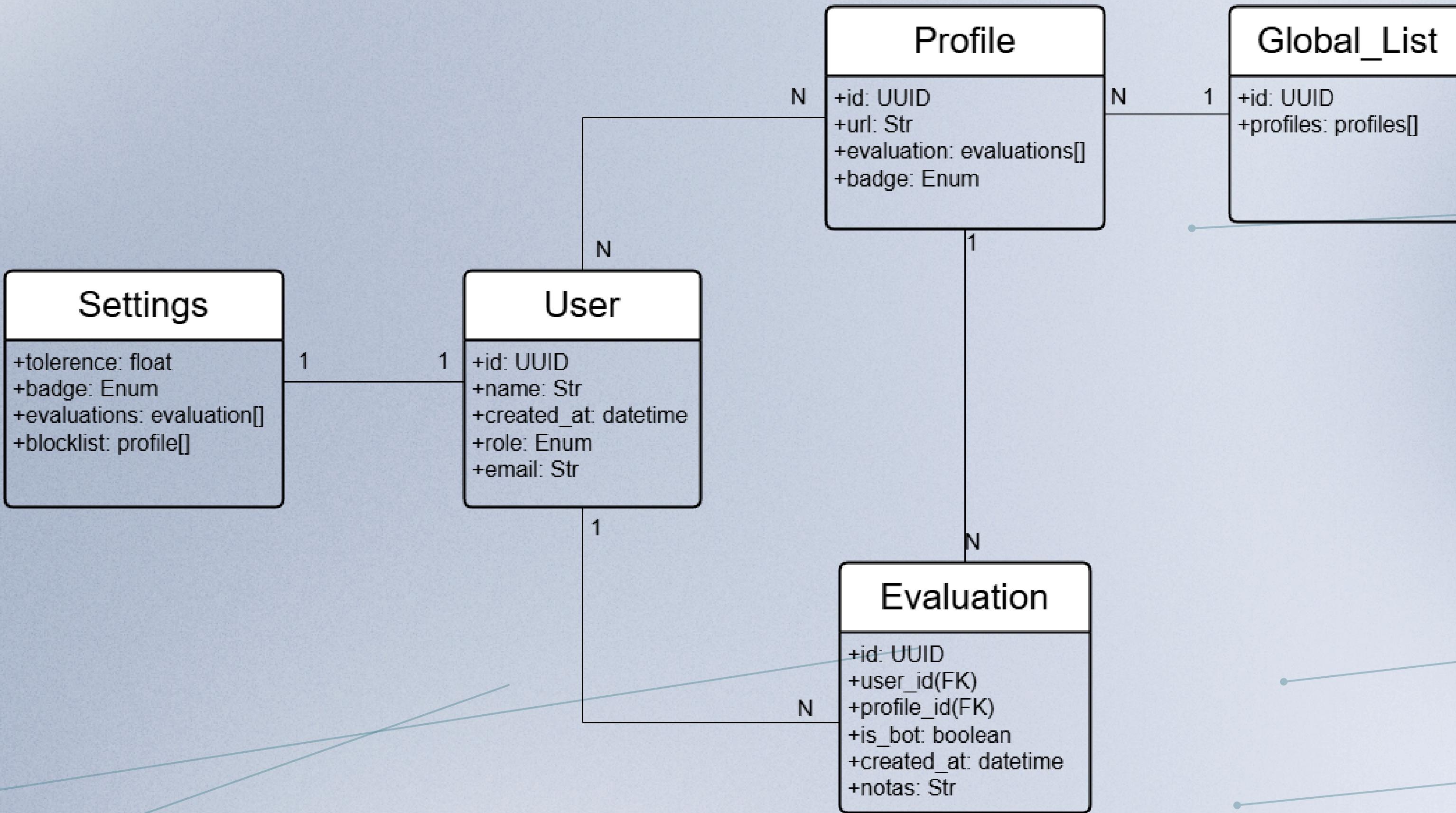
## Verifier



# ARCHITECTURE



# DOMAIN MODEL



# MOCKUPS

**BotBlocker**

Visit our website for more details on this account.

X account  
@JohnDoeOnTwitter

**AI analysis**  
**88% chance of being AI**  
(97 votes)

**Voting**  
Is this profile AI?  
Yes      No

**BotBlocker**

Visit our website for more details on this account.

X account  
@JohnDoeOnTwitter

**AI analysis**  
**88% chance of being AI**  
(97 votes)

**Voting**  
Reason?  
 Inconsistency  
 Unnatural posting patterns  
 Lacking quality and uniqueness  
 Lack of engagement  
 Other

**Submit**

**BotBlocker**

Sign in with google

**Blocking Settings**

At what percentage do you want accounts to start getting blocked?  
0% ————— 70% ————— 100%

**Block accounts verified such as:**

- AI
- Without verification

**Log out**

**Public Blacklist** **Private Blacklist**

- Instagram account @JohnDoeOnInsta 88% chance of being AI
- Facebook account @JohnDoeOnFB 71% chance of being AI
- X account @JohnDoeTweets 73% chance of being AI
- Instagram account @JaneDoeOnInsta 82% chance of being AI
- Instagram account JaneDoeOnFB 90% chance of being AI

**Profile found!**  
Check its analysis:

Instagram account @universidadedeaveiro 1,890 posts 51.5K followers 268 following

Melhor Universidade (ranking StuDocu)  
Valorização do mérito académico e desportivo  
Identifica-nos @universidadedeaveiro @eciuniversity

**AI analysis**  
**15% chance of being AI**  
(105 votes)

Our specialists verified this account as a human

**Evaluations:**

- Hugo Castro Considered this profile **not a bot**. On 20/02/2025 · 14:23
- Angela Ribeiro Considered this profile **a bot**. On 20/02/2025 · 11:02
- João Viegas Considered this profile **not a bot**. On 19/02/2025 · 19:50

**Reason(s):**

- AI-generated images
- Inconsistent posting
- Unnatural posting patterns

# MOCKUPS (NEW)

**BotBlocker**

Search the account you want to find

These are the most recently created BB\_Accounts:

Profile	Actions
@JonSnow	Evaluations History   Time-out   Ban
@MaxIsStrange	Evaluations History   Time-out   Ban
@MeredithGrey	Evaluations History   Time-out   Ban
@oklou	Evaluations History   Time-out   Ban
@bjorkSecretLifeOfPets	Evaluations History   Time-out   Ban

**BotBlocker**

Search the profile whose evaluations you want to find

These are the most recent evaluations left:

Evaluation left	Evaluated account	Actions
Hugo Castro Considered this profile <b>not a bot.</b> On 20/02/2025 · 14:23	John Doe 83% AI probability	trash
Ângela Ribeiro Considered this profile <b>a bot.</b> On 20/02/2025 · 11:02	John Doe 83% AI probability	trash

**Reason(s):**

- AI-generated images
- Inconsistent posting
- Unnatural posting patterns

**BotBlocker**

Search the account whose anomalies you want to find

These are the most recent anomalies:

Profile	Motive(s)	Actions
@JonSnow	Inconsistent Voting Patterns	Time-out   Ban
@Craig	Unusual Activity Patterns	Time-out   Ban
@Stewart	Spam Voting	Time-out   Ban
@Mariah	Low Credibility Evaluator	Time-out   Ban
@Ellie	Spam Voting	Time-out   Ban

**BotBlocker**

Enter social media URL. Example: https://x.com/BotBlocker

Search the social media URL of the profile you want to verify.

OR

Select Social Media | Username. Example: @BotBlocker

**Profile found!**  
Check its analysis:

Instagram account  
@universidadedeaveiro 1,890 posts 51.5K followers 268 following

Melhor Universidade 🇵🇹 (ranking StuDocu)  
Valorização do mérito académico e desportivo  
Identifica-nos @universidadedeaveiro @eciuniversity

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10/02 - 17/02	18/02 - 24/02	25/02 - 03/03	04/03 - 10/03
<p><b>Project Foundation &amp; Documentation Setup</b></p> <ul style="list-style-type: none"> <li>• Use Case Diagram (JC, JV, Â)</li> <li>• GitHub Repository Organization (H)</li> <li>• Setup Documentation Website (AR, H)</li> </ul>	<p><b>Project Planning and Framework</b></p> <ul style="list-style-type: none"> <li>• Project Calendar Creation (*)</li> <li>• Jira Project Setup (Â)</li> <li>• Project Presentation Preparation (*)</li> <li>• Definition of Context and State of the Art (JV)</li> <li>• High-Level Architecture Design (JC)</li> </ul>	<p><b>Requirements &amp; UX Design</b></p> <ul style="list-style-type: none"> <li>• Requirement Gathering (*)</li> <li>• Functional Requirements (JV)</li> <li>• Non-Functional Requirements (Â)</li> <li>• Define Personas and Scenarios (JC)</li> <li>• Develop the mockups (AR, H)</li> </ul>	<p><b>System Modeling</b></p> <ul style="list-style-type: none"> <li>• Refine the state of the art (JV)</li> <li>• Technological Model (*)</li> <li>• Define the Domain Model (JC)</li> <li>• Make the Deployment Diagram (JC)</li> <li>• Presentation (*)</li> </ul>
11/03 - 17/03	18/03 - 24/03	25/03 - 31/03	
<p><b>Extension Initiation and Database Setup</b></p> <ul style="list-style-type: none"> <li>• Dockerize the project (H)</li> <li>• Database Configuration and Setup (Â, JC)</li> <li>• Extension Initialization and Configuration (Â, JC)</li> <li>• Development of Extension Popup Frontend (AR)</li> <li>• Backend API Implementation for Popup Interaction (JV)</li> </ul>	<p><b>Interface Development &amp; API Integration</b></p> <ul style="list-style-type: none"> <li>• Development of the extension interface and the user website (JC, H)</li> <li>• Develop the frontend for the verifier interfaces (AR)</li> <li>• Continue Implementation of RESTful API (JV, Â)</li> </ul>	<p><b>Blocking &amp; Filtering System Development</b></p> <ul style="list-style-type: none"> <li>• Develop the block system (JC, H, JV)</li> <li>• Develop the filtering / blacklist management (AR, Â)</li> </ul>	

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01/04 - 07/04	08/04 - 14/04	15/04 - 21/04	22/04 - 28/04
<b>Presentation and refinement</b> <ul style="list-style-type: none"><li>• Presentation (*)</li></ul>	<b>Continue developing the block and blacklist management system</b>	<b>Finalize the block and blacklist management</b>	<b>Admin Interface &amp; API Enhancement</b> <ul style="list-style-type: none"><li>• Develop the frontend of the admin interface</li><li>• Continue Implementation of RESTful API</li></ul>
29/04 - 05/05	18/03 - 24/03	25/03 - 31/03	
<b>Improving upon the filtering techniques</b>	<b>Demo + poster for students@deti &amp; video</b> <ul style="list-style-type: none"><li>• Poster</li><li>• Video</li><li>• Demo</li><li>• Finish technical report (*)</li></ul>	<b>Final presentation</b> <ul style="list-style-type: none"><li>• Work on presentation (*)</li></ul>	

# Thank you!

<https://botblocker-pi.github.io/Documentation/>



The image displays two screenshots of the BotSentinel Documentation website. The top screenshot shows the homepage with a blue header featuring the text "Your Voice Matters. Don't Let AI Drown It Out" and a subtext about taking control of online spaces. It includes a cartoon robot icon on a laptop screen. The bottom screenshot shows a "Milestones" page with a sidebar listing four phases: MS1 - Inception Phase, MS2 - Elaboration Phase, MS3 - Construction, and MS4 - Transition. Each phase is represented by a card with a small icon and a link to its details. Below the sidebar, there are three cards: "Trust the Internet Again" (with a shield icon), "Community-Based Ratings" (with a people icon), and "Flexible Blacklist Control" (with a list icon). At the bottom of the page, there is a section titled "Background Objectives Benefits" with a small illustration of two people at a desk.