Report

Debolina Das

Zhengbin Xue

Dhwani Trivedi

Meghrahsubg Parmar

Functional requirements:

- **Page Navigation:** Provide clear navigation menus or links for users to browse different sections and content of the webpage.
- **BCI Introduction:** Present a detailed overview of Brain-Computer Interface, including its definition, principles, and application domains.
- **Visual and Textual Display:** Use a combination of images and text to illustrate relevant concepts, research findings, and practical applications of BCI.
- **Use Cases:** Showcase real-life application examples of Brain-Computer Interface to enhance users' understanding of its potential.
- **Contact Information:** Provide ways for users to contact the webpage administrator or relevant experts for further consultation or collaboration opportunities.

Non-Functional requirements:

- **Usability:** Design a simple, clear, and easy-to-navigate user interface to ensure users can quickly find the information they need.
- **Reliability:** The webpage should operate stably without frequent crashes or errors.
- **Security:** Ensure the security of webpage data and user information, guarding against potential network attacks and data breaches.
- **Cross-platform Compatibility:** The webpage should display and function correctly on different browsers and devices to ensure cross-platform compatibility.

10 Heuristics for User Interface Design

- **Visibility of system status:** In the webpage, we provide users with clear feedback about the operation status through loading indicators and progress bars, allowing them to know if the webpage is currently loading or processing an action. For example, when you copy the hyperlink, you can click “view” to view all the links user saved in clipboard.
- **Match between system and the real world:** We design the webpage using familiar language, terminology, and icons to ensure users can quickly understand and interact with the webpage. For example, we use clear and straightforward wording, limiting the use of slang.

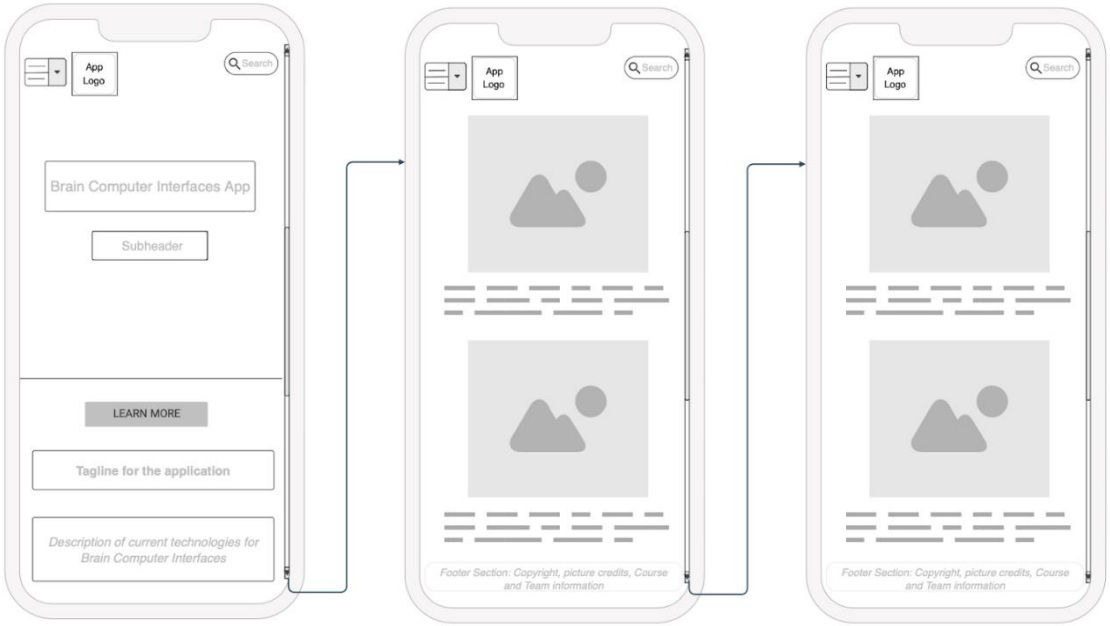
- **User control and freedom:** We offer users options to undo actions, go back, edit, and save, giving them a certain level of control and freedom within the webpage. For example, users can save images or copy hyperlinks.
- **Consistency and standards:** In the webpage design, we maintain consistent layouts, colors, fonts, and interaction patterns to enable users to easily understand and use the webpage. For example, we use the same background color and differentiate headings or hyperlinks with distinct colors and font sizes.
- **Error prevention:** When the user clicks the apply button, the user does not directly open the email, but switches to the contact page, in order to prevent some people from touching the apply button by mistake.
- **Recognition rather than recall:** We use labels, icons, and symbols to represent actions and functions, reducing the need for users to remember specific details. For example, a small magnifying glass indicates a search box, and an icon allows users to return to the main page.
- **Flexibility and efficiency of use:** We offer shortcuts and quick access tools for frequently used functions, making it more efficient for users to operate the webpage. For example, we provide an icon to return to the main page and navigation links to various pages.
- **Aesthetic and minimalist design:** We adopt a clean and minimalistic design style to minimize distractions and unnecessary content, emphasizing essential information.
- **Help users recognize, diagnose, and recover from errors**: We provide clear error messages to help users resolve potential issues. For example, When users search for the content and information they want in the search box, if there are no relevant search results, there will be a text reminder for the user to try other searches again.
- **Help and documentation:** We offer user-friendly and searchable help documents, providing simple search and easy-to-understand information without unnecessary complexity.

Life cycle of interface development

- **Project Planning and Requirements Gathering Phase:** In this stage, we develop the project plan and define the website's goals and scope. We start collecting relevant requirements and expectations related to Brain-Computer Interface.
- **Website Design Phase:** Based on the gathered requirements, we begin conceptualizing the overall layout and functionality of the website. Subsequently, we create sketches, determine page structures, choose appropriate colors and images, and design the user interface.
- **Prototyping and Review Phase:** During this phase, we create wireframes and prototypes to preview the website's appearance and functionality. The wireframes undergo review and feedback, and we make some modifications and optimizations.
- **Development and Coding Phase:** After finalizing the design, we use Google Site to build the website and implement its functionality, ensuring compatibility with different browsers and devices.
- **Testing and Debugging Phase:** Once the website is completed, we conduct comprehensive testing to ensure all features work correctly and eliminate potential errors and vulnerabilities.

- **Deployment and Release Phase:** After successfully testing the website, we determine it is ready for public access. We use Google Site's public function to make it accessible to users.
- **Maintenance and Update Phase:** After the website is published, we'll continuously update and improve it based on user feedback. We also monitor the website's normal operation.

Wireframes: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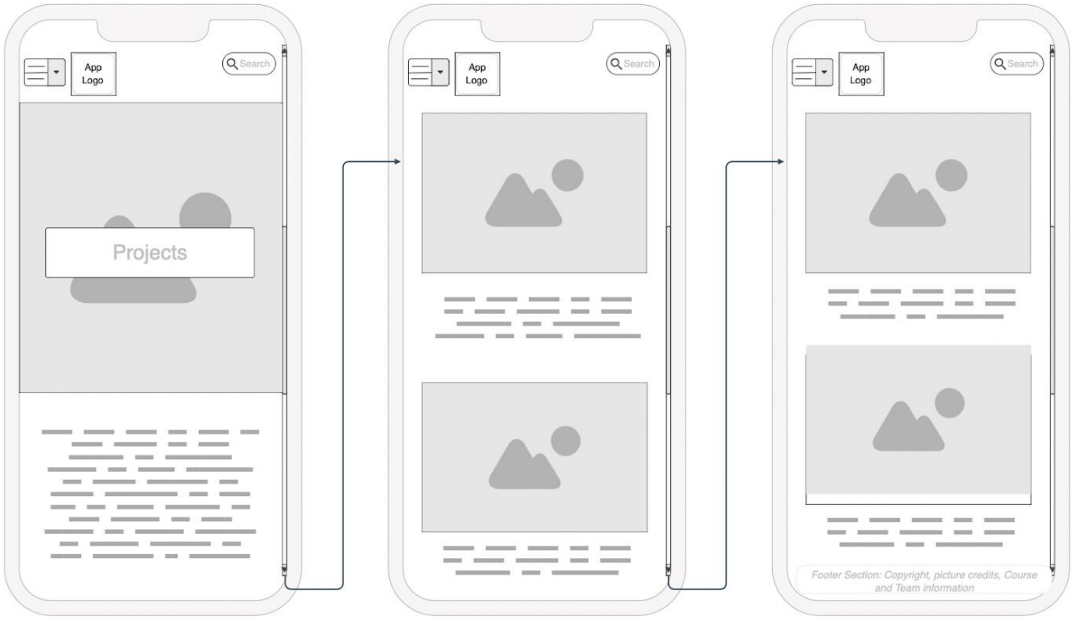
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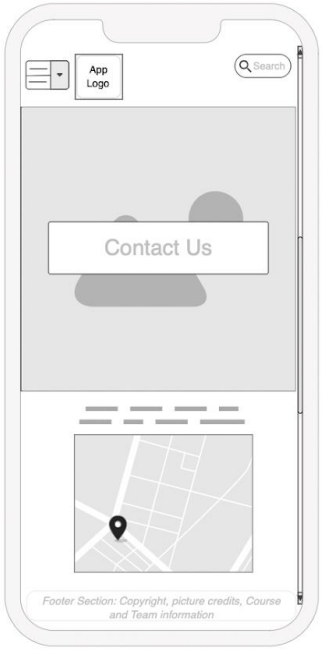
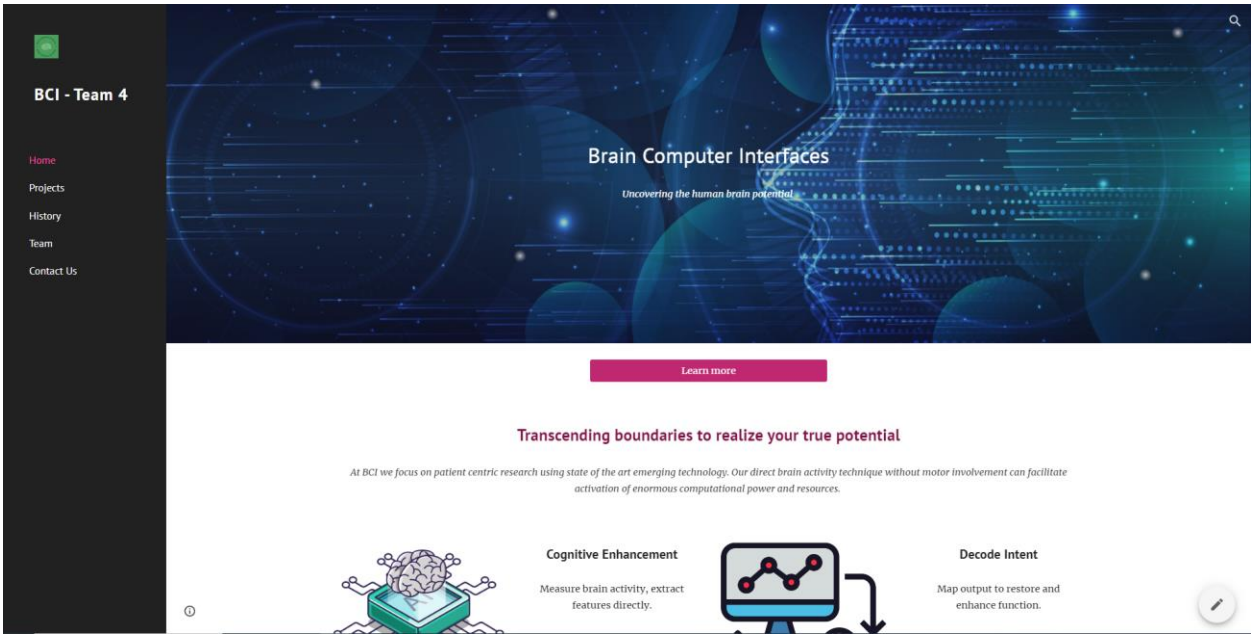


Screenshots of the completed website:

- **PC**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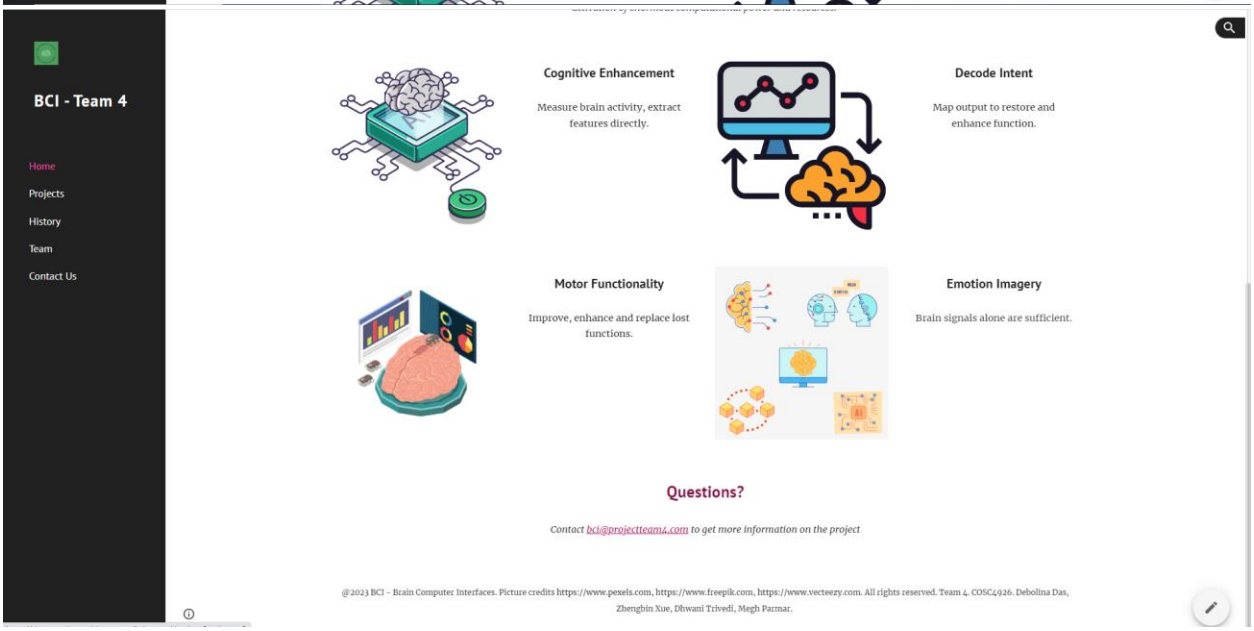
Brain Computer Interfaces
Uncovering the human brain potential
Learn more
Transcending boundaries to realize your true potential
At BCI we focus on patient centric research using state of the art emerging technology. Our direct brain activity technique without motor involvement can facilitate activation of enormous computational power and resources.
Cognitive Enhancement
Measure brain activity, extract features directly.
Decode Intent
Map output to restore and enhance function.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Our state of the art techniques measure activity of the central nervous system and converts it into artificial output that replaces, restores, enhances, supplements or improves natural CNS output, thereby changing the ongoing interactions between the CNS and its external or internal environment.

Cognitive Enhancements

Brain stimulation techniques, neurofeedback training and enhanced learning are all part of this growing field.

Decode Intent

By interpreting patient's brain activity pattern, it helps in assistive communication as well as paralyzed patients.

Motor Functionality

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A Brief History

Improve the quality of life through direct interface with the brain

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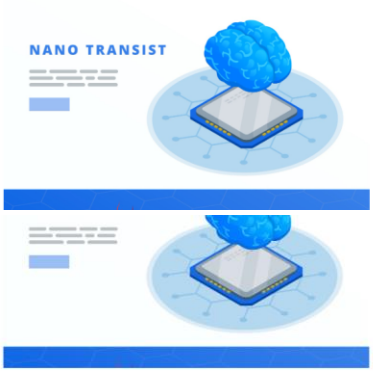
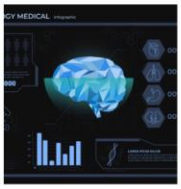


Picture of a nano chip, fully implantable and cosmetically invisible

Where we are today

Today nano chips are more sophisticated and advanced allowing patients to carry out tasks as per intent with minimal effort.

Brain activation nodes



Direct motor interaction from brain

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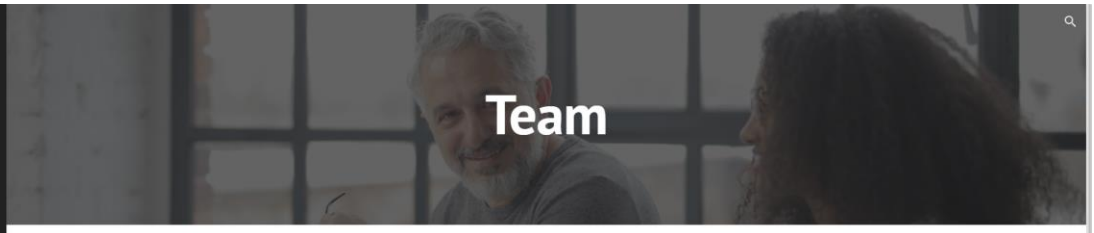

Team

Want to make a positive impact in the world?

Leadership

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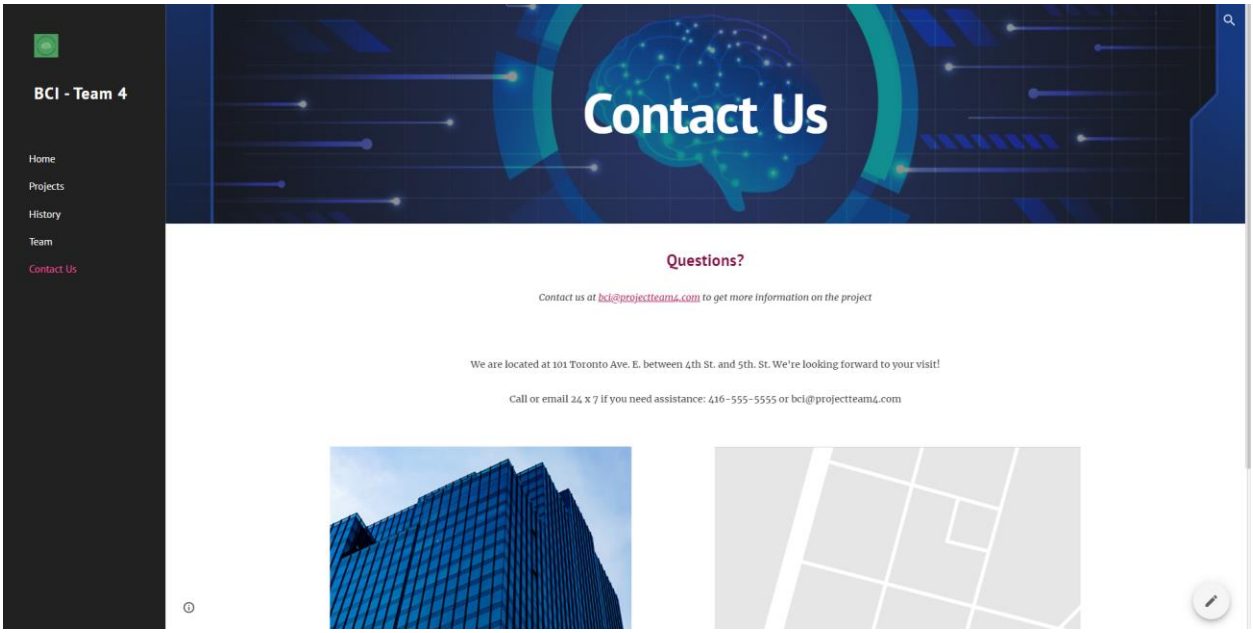
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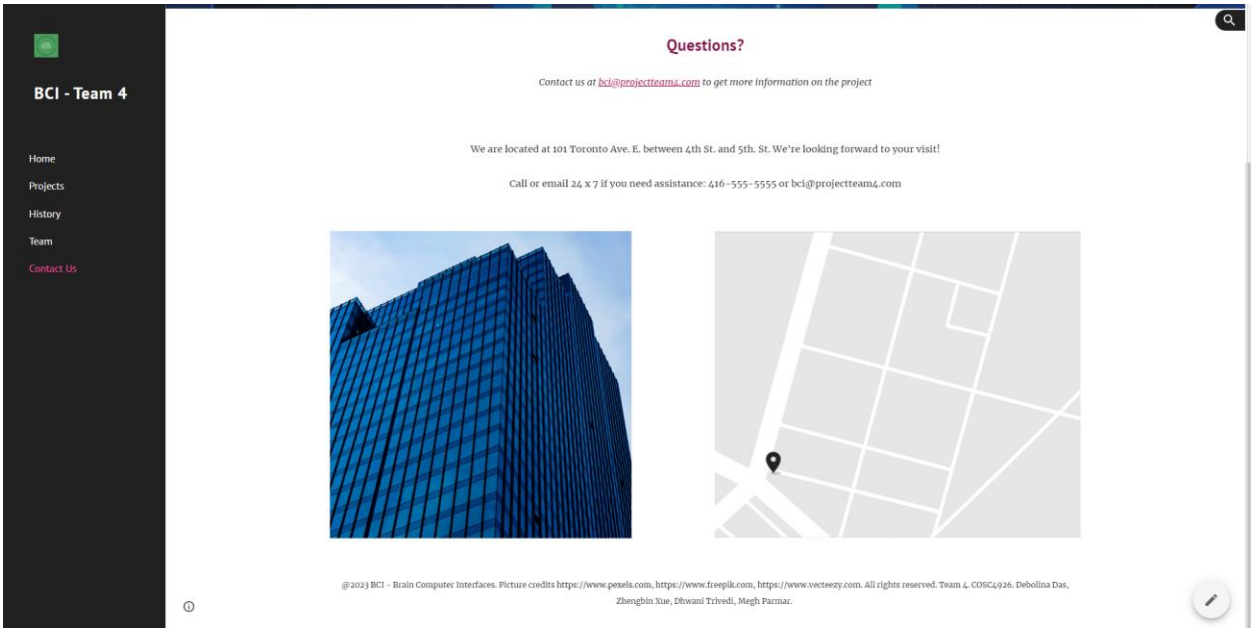
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- **Phone**

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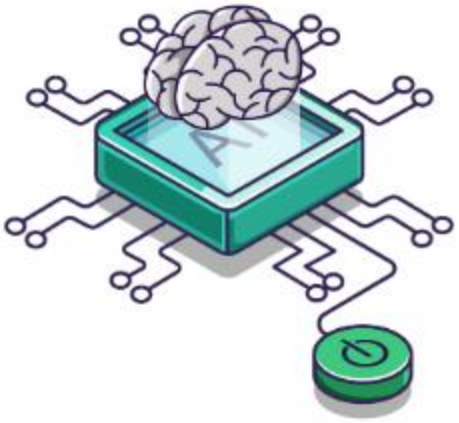

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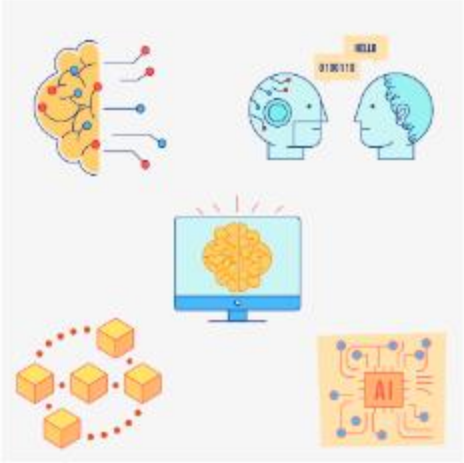

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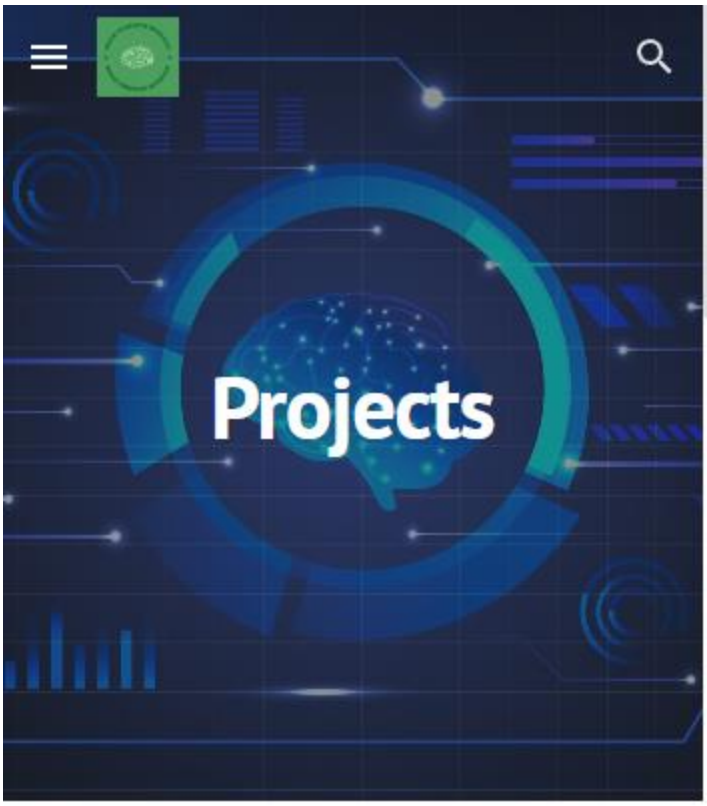

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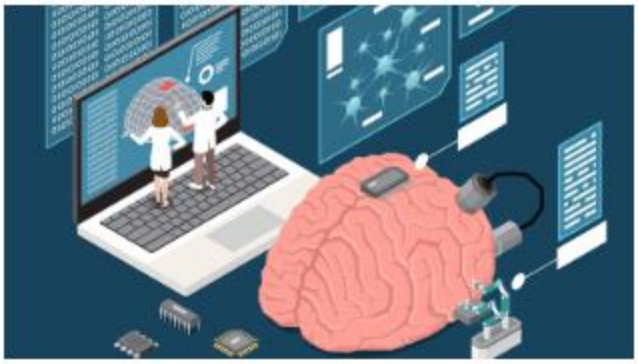

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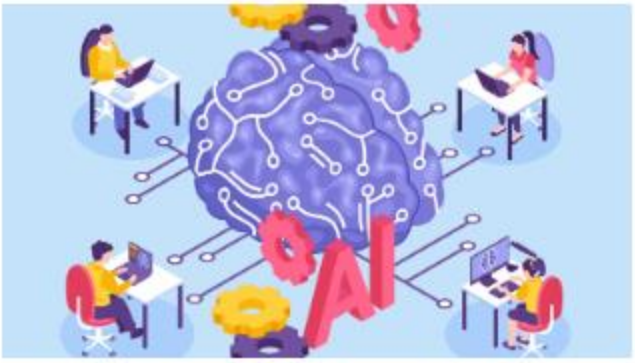

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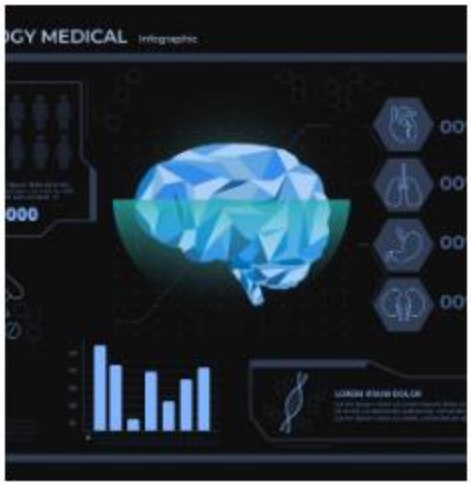

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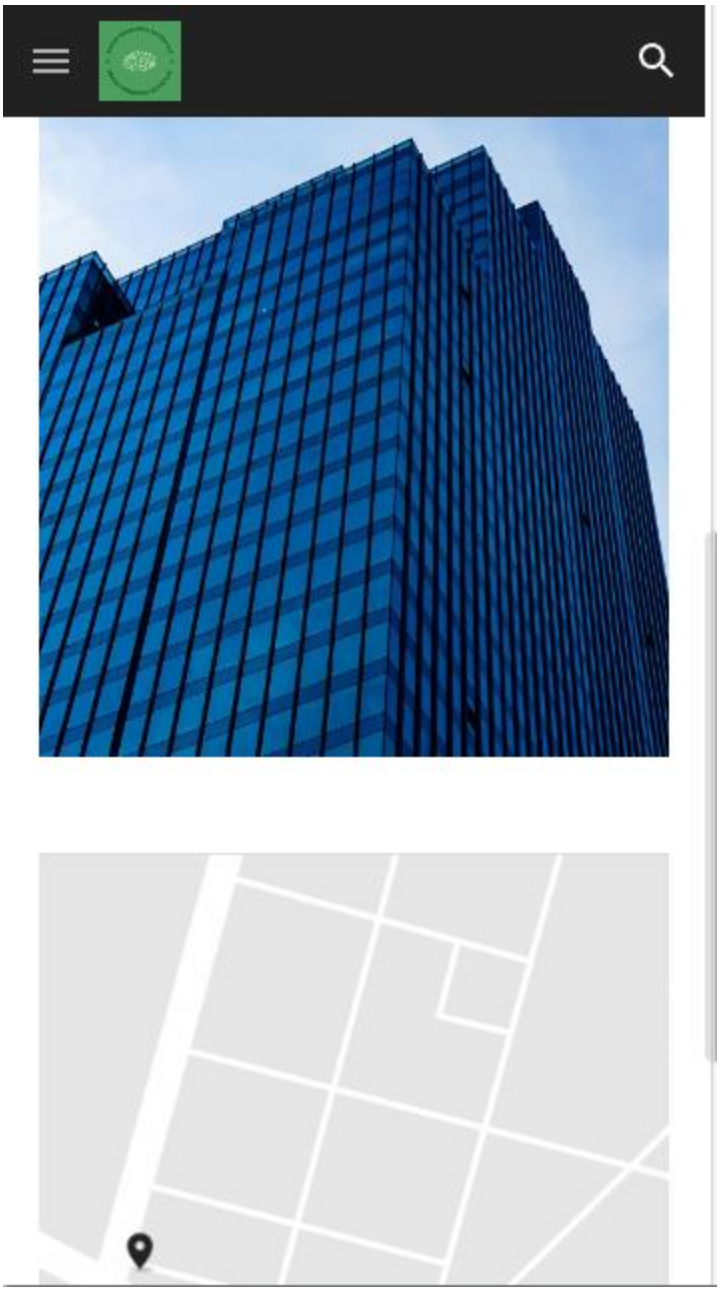

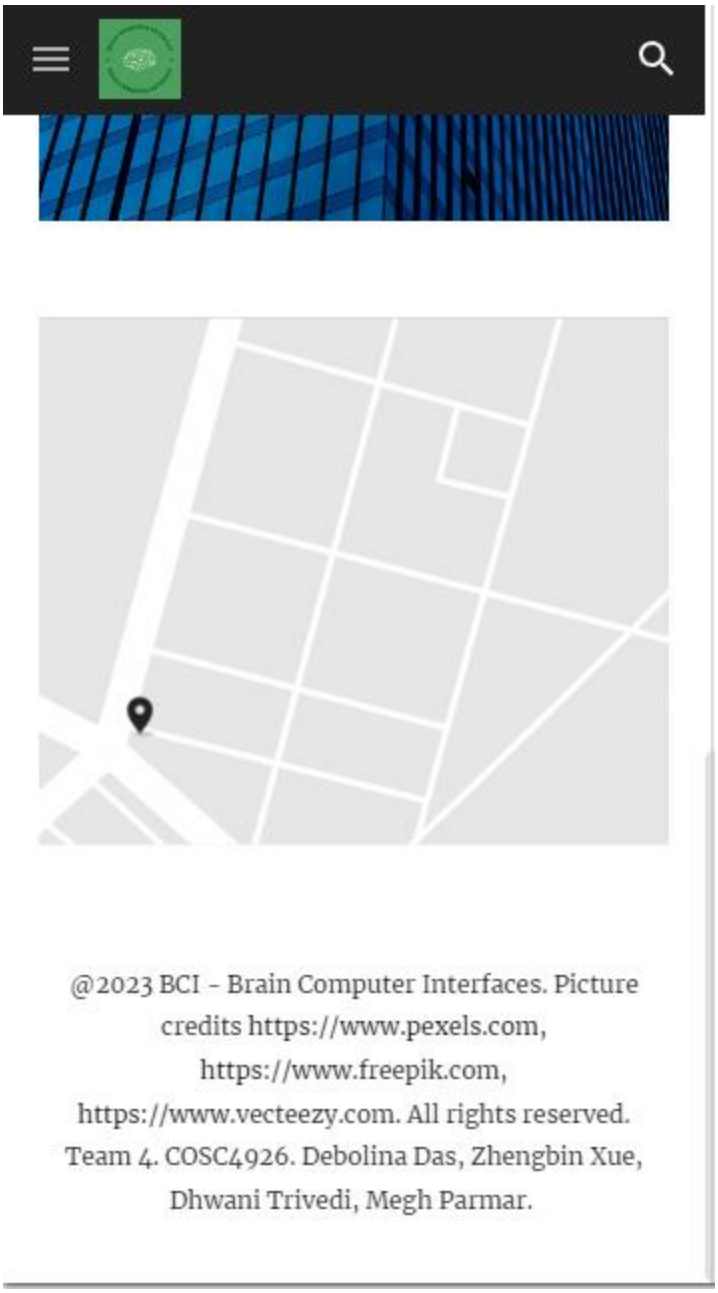
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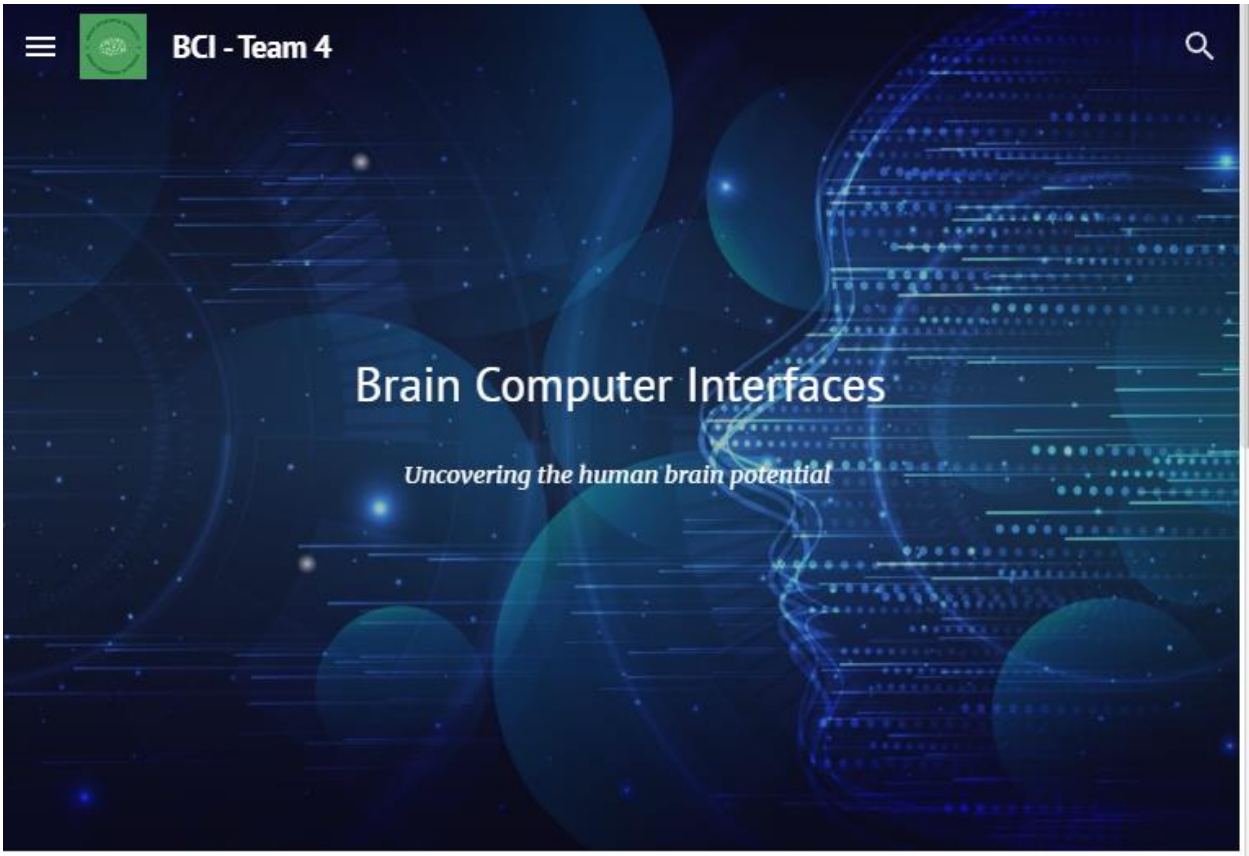
- **Tablet**



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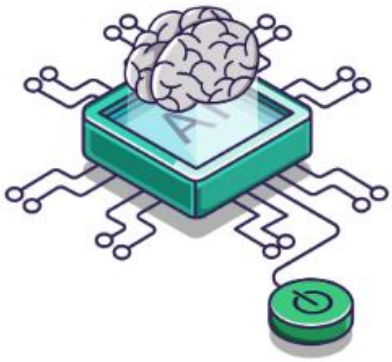

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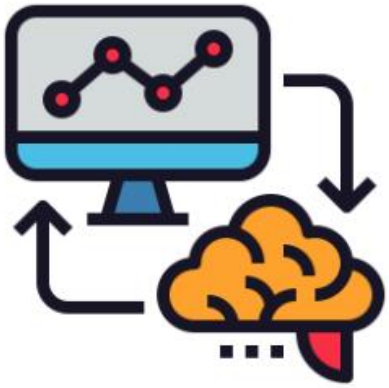

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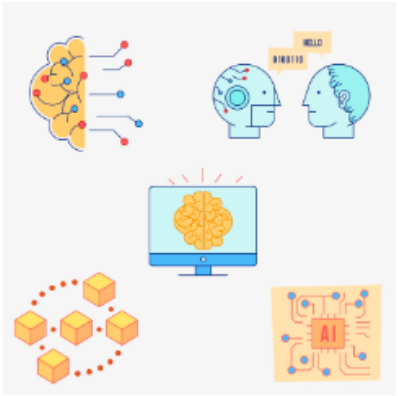

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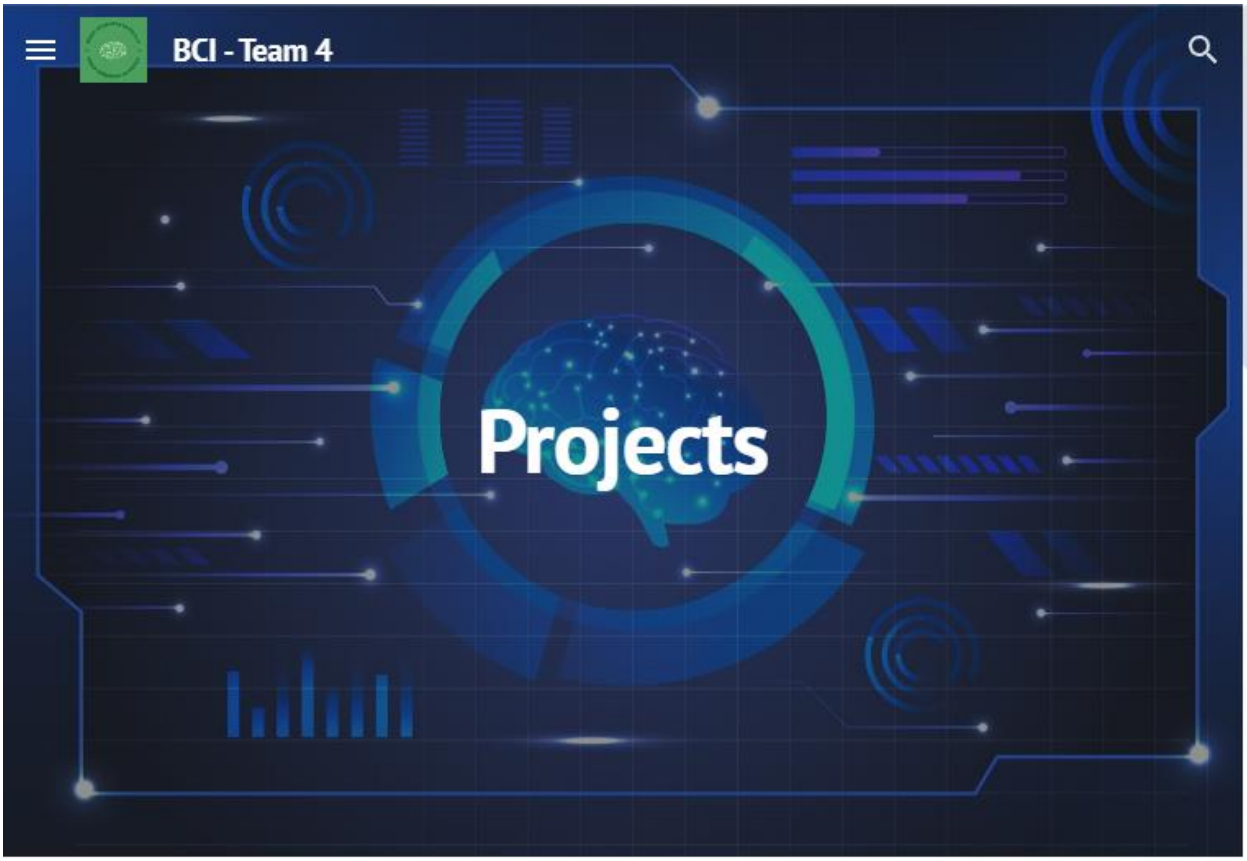

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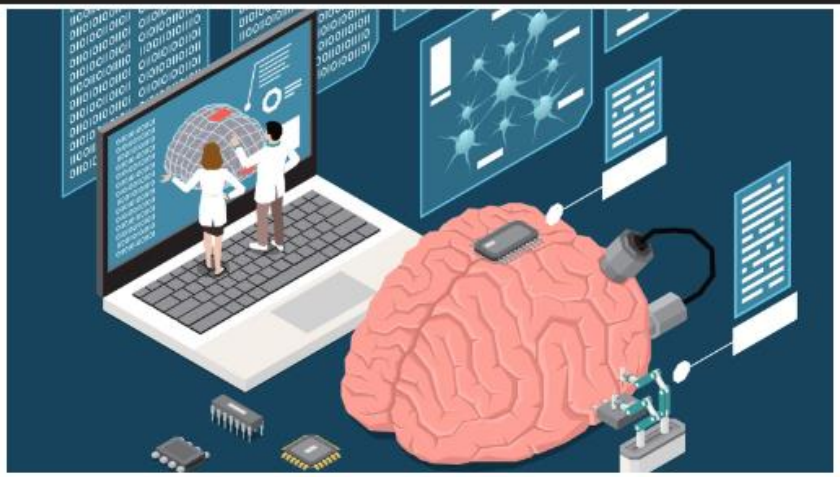

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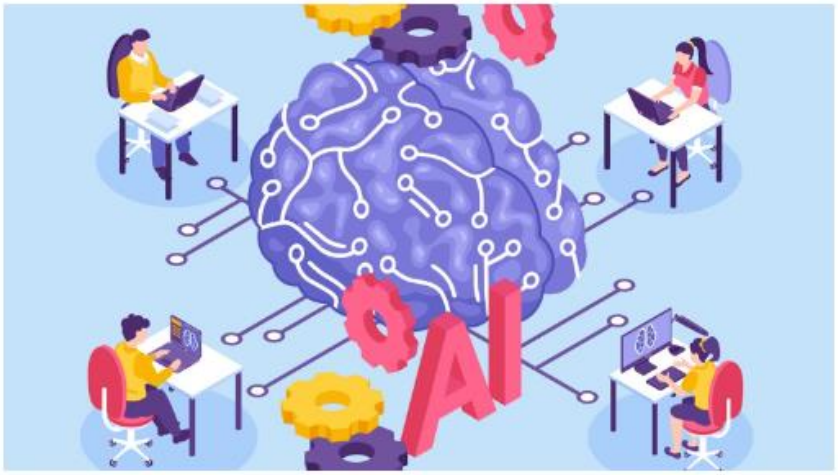

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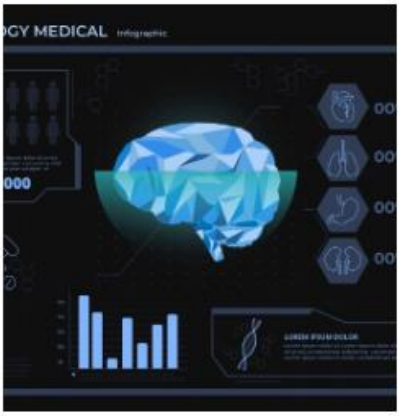
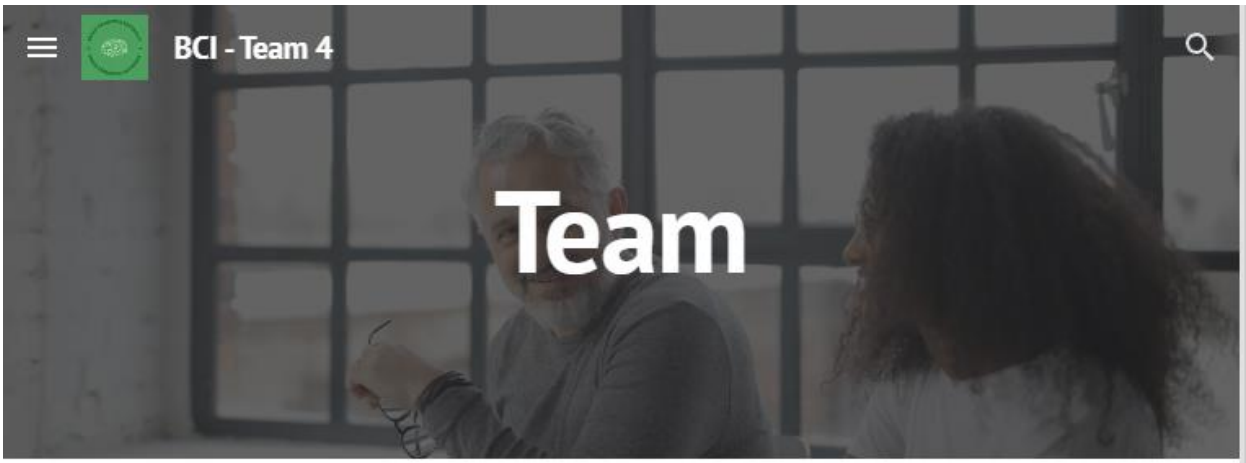


Direct motor interaction from brain



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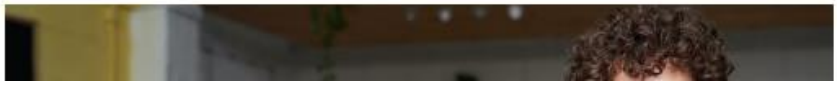

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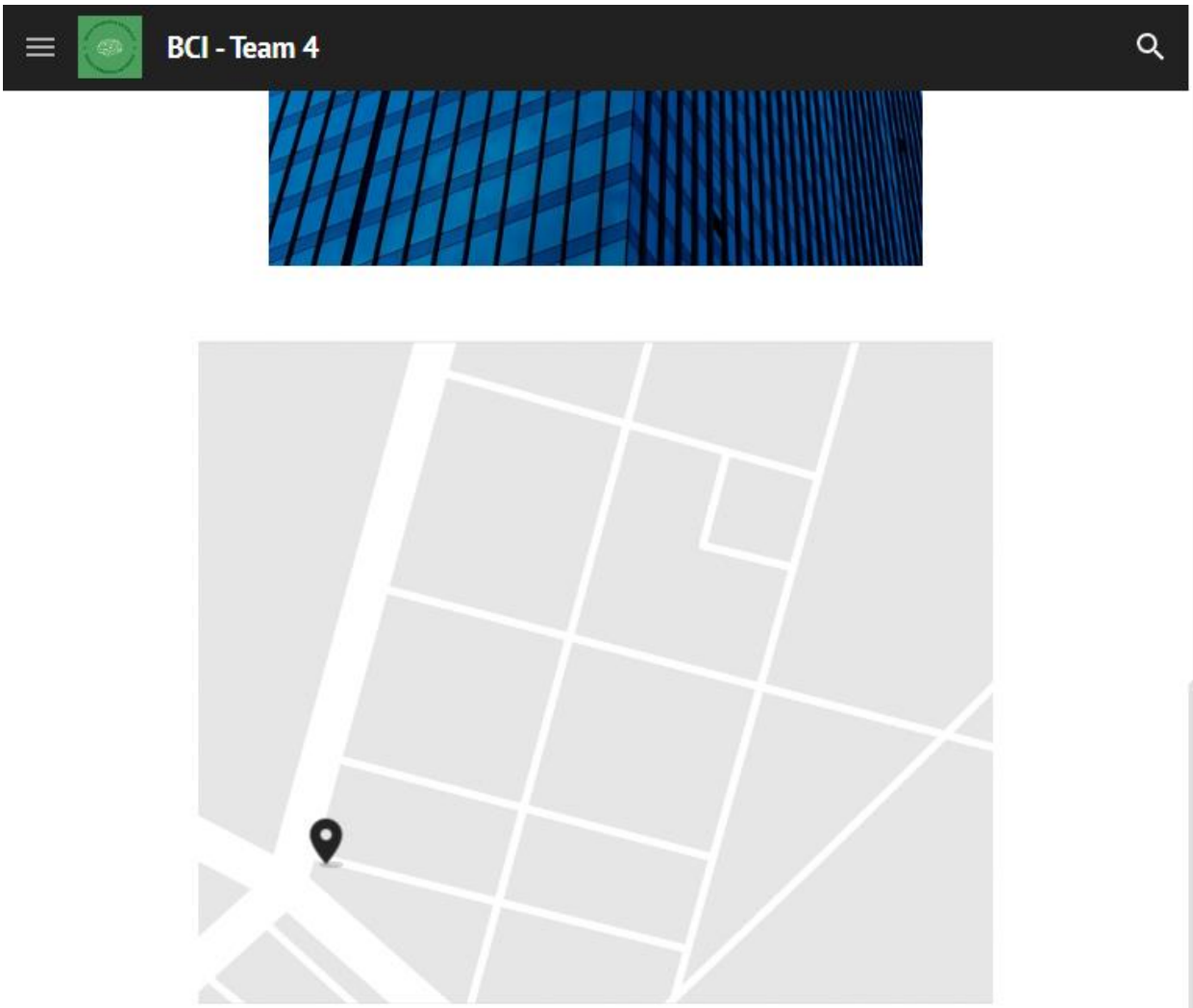

Website link:

https://sites.google.com/algomau.ca/bci-team-4/home?authuser=2

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