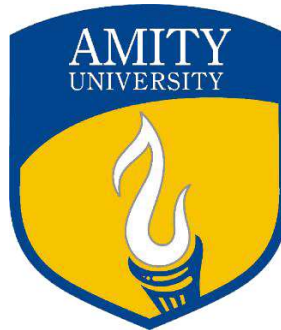# AMITY UNIVERSITY

—————UTTAR PRADESH—————

In-House Project Report

on

AJ DREXEL AUTISM INSTITUTE WEBSITE

Submitted to

AMITY UNIVERSITY UTTAR PRADESH

In partial fulfilment of the requirements for the award of the degree of

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In

Computer Science & Engineering – 3C

By

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ABSTRACT

Autism, as of today is one of the most common disorders often witnessed in children not only in the United States, but in various parts of the world. Autism engulfs some major abilities and is responsible for causing problems with social interactions, impairment of verbal as well as non-verbal communication, and restricting an individual's interests.

The sooner autism is diagnosed the better it is in the long run as treatment can start at an early phase. AJ Drexel Autism Institute addresses the challenges faced around the autism spectrum disorders. Their website is the main connection between the demographic that they are targeting and the crucial information that needs to be communicated to them.

The task at hand was to look at an outdated and non-user-friendly website and redesign it completely from scratch. In this project I restructured the whole website using modern frameworks and tools while keeping the whole nature as user-centric as possible. I followed a mobile-first approach, keeping the standards up to date.

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CHAPTER I: INTRODUCTION

1.1 Introduction

At this moment, the foremost-integral component of fighting autism is awareness. Not only should the individual have awareness to the extent of the disorder that entails him/her, but parents need to have a check on their children. Enter, AJ Drexel Autism Institute. The A.J. Drexel Autism Institute is the first research organization built around a public health science approach to understanding and addressing the challenges of autism spectrum disorders. The Autism Institute's mission is to discover, develop, promote and disseminate population-level and community-based approaches that will prevent autism-associated morbidity and disability and improve the quality of life for individuals with autism of all ages.

I worked with a team of students from different non-technical domain from Drexel University and redesigned the whole website for the client, A.J. Drexel Autism Institute.

1.2 Autism Institute

The Autism Institute is comprised of four main Research Program Areas and Cores. The Cores support autism spectrum disorder research initiatives within the Program Areas and throughout the rest of the Drexel University. The Cores also collaborate with researchers and other partners outside of Drexel on initiatives that are consistent with the Autism Institute's mission. The webpages that correspond to the four main Research Program Areas are extremely outdated, hard to navigate, lengthy, and contain inconsistencies across various platforms. In addition, the webpages are not user friendly and challenging for employees of the Autism Institute to independently make changes and regular updates to. The Autism Institute required a team of skilled project managers and technical workers that can find simple solutions to their problems and to implement these changes on their site.

1.3 Understanding the Current Problem

The Autism Institute currently has four main ongoing research programs and four web pages on the Autism Institute website that correspond to each program. Both the content and layout of these webpages are outdated, lengthy, and technical, making it hard for viewers of the site to understand. We understand that these pages are hard to navigate and unsymmetrical. The Autism Institute sought to solve this problem by outsourcing to a team that can update and redesign their main research landing page as well as the four individual research pages. The Autism Institute also wanted to make their research page sites more appealing to viewers and easier for the team at the Autism Institute to make changes to.

The Autism Institute emphasized the importance that these pages look consistent, organized, and meet all Drexel requirements. The goal is to make these pages be eye-catching, clearly organized as well as quickly conveying the importance of the Autism Institute's research in a way that is accessible and easy to digest by the general public.

For the functional part of the web pages, when you click "Research & other projects" it shows an overview web page about the Autism Institute researches with three tabs on the left-hand side (Overview, Research, and Other projects). However, when we click the "Research" and "Other projects" (on the left tab) the "Overview" tab on the left side is gone. This is one example of a technical problem that needs to be fixed. Next, when we click "Modifiable Autism risk factors research program," the three tabs on the left side are completely gone. In addition, other research web pages also didn't have the overview tab on the left side. It's shown only in Research and other projects.

As mentioned previously, the layout for the four web pages is currently very plain and simple. First, we would like to we going to recreate the web page for "Modifiable autism risk factors" to look consistent with other research programs. On all of the pages, there is too much negative space on both the left and right sides.

For better understanding of our client's problem, we utilized the DESIGN thinking process and it's five steps, empathize, define, ideate, prototype, and test. The DESIGN thinking process allowed us to present our website to our client and gain feedback to make updates and edits before the final project deadline.

CHAPTER II: MATERIAL & SET-UP

2.1 Approach
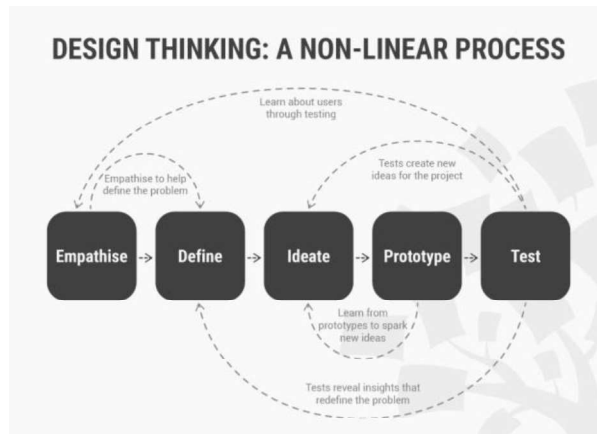
When deciding what approach to take during our project we decided to try a new solution and solve the problem with design thinking. Which, is a five-stage method that provides a solution-based approach to solving our problems. The five stages are as follows; Emphasize, define, ideate, prototype, and test.

Empathize: The first stage of the Design Thinking process is to gain an empathic understanding of the problem you are trying to solve. By emphasizing we physically went to the Drexel Autism Institute more than once and kept asking questions on what they were looking for.

Define: During the Define stage, you put together the information you have created and gathered during the Empathize stage. This is where you will analyze your observations and synthesize them in order to define the core problems that you and your team have identified up to this point. By asking for advice from team-members we could elaborate them into one piece that would benefit everyone as a whole.

Ideate: During the third stage of the Design Thinking process, designers are ready to start generating ideas. You've grown to understand your users and their needs in the Empathize stage, and you've analyzed and synthesized your observations in the Define stage, and ended up with a human-centered problem statement. With this solid background, you and your team members can start to "think outside the box" to identify

new solutions to the problem statement you've created, and you can start to look for alternative ways of viewing the problem. During the third stage of Design Thinking, we used Wireframes, and we had group meetings with the client.

Prototype: Prototypes may be shared and tested within the team itself, in other departments, or on a small group of people outside the design team. This is an experimental phase, and the aim is to identify the best possible solution for each of the problems identified during the first three stages. During the prototype stage, we worked on research pages and the cycle of how we delegated the research pages.

Test: This is the final stage of the 5 stage-model, but in an iterative process, the results generated during the testing phase are often used to redefine one or more problems and inform the understanding of the users, the conditions of use, how people think, behave, and feel, and to empathize. We got feedback from various members at the Drexel Autism Institute on what they thought could better the project and got real time results. In the end we combined and converted everything into a final project.

2.2 Major Deliverables:

- ❖ Wireframes
- ❖ WPR
- ❖ Rough Design
- ❖ Website
- ❖ Hosting

2.3 Project Assumptions

There are many assumptions that have been made during the planning phase. Most of the assumptions are about the design and layout. We did the research about how to build/ create a wireframe to help understand how the website should be created. On the existing

Drexel Autism webpage, there are many webpages that have lots of empty space. We designed a web page with less negative space and which was easier to understand.

Initially we did apprehend the difficulty we would face in communication over the two channels – Drexel and Amity. The wireframes and brainstorming process turned out to be some major defining moments. During the execution process, there were many tiny problems occurring during the process that we didn't think about during the planning phase. For example, the navigator bar, the logo, and hyperlink. Remarkably suck problems took us longer than we expected.

2.4 Project Management Tools, Templates, and Techniques:

1. **MockFlow**: MockFlow is an online resource where we were able to create our wireframes with ease and efficiency.
2. **GitHub:** GitHub is a safe, online website made to easily help people create other websites through using their resources such as the ability to correct code that is typed in wrong.
3. **Google Docs:** For all our shared documentation we used Google Drive as a quick and easy way to share the files and everything we did. This way we were able to double check each other and make sure we have sufficient information for each deliverable completed.
4. **Positive Reinforcement:** Instead of getting upset and angry over small errors, we worked to instead help one another and work together to fix a problem. We realized that all problems have simple solutions when we work together.
5. **Messaging Apps:** To help with communication, we used WhatsApp and iMessage.
6. **DESIGN Thinking:** We utilized the five step DESIGN thinking technique process throughout our project to complete the best possible deliverable for our client.
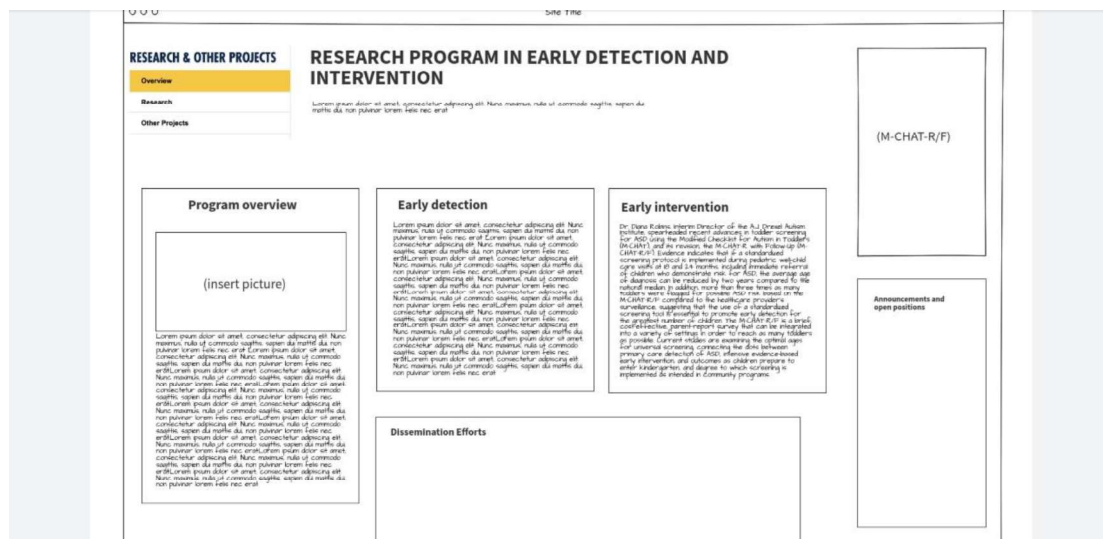
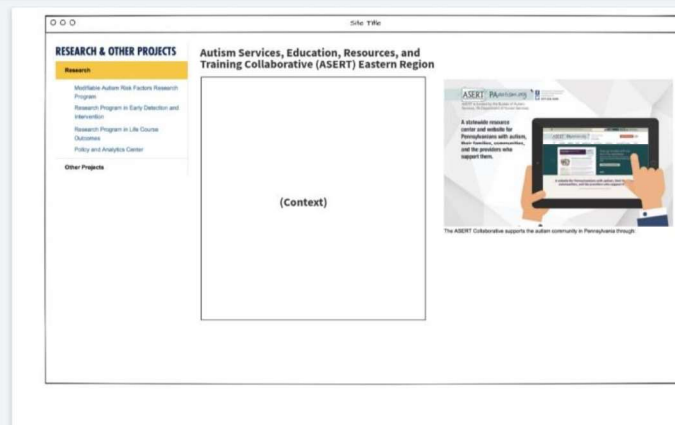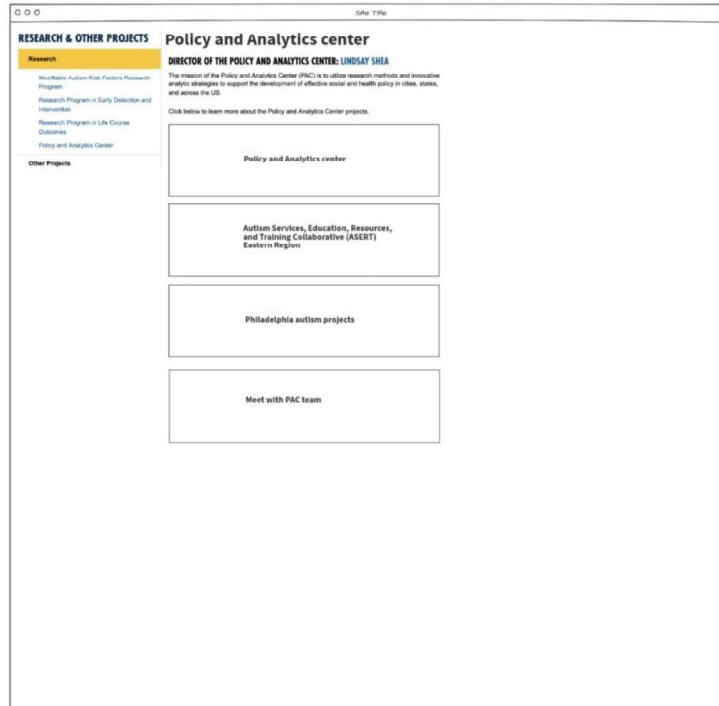# CHAPTER III: RESULTS & DISCUSSIONS

3.1 Wireframes

Wireframing process was the main step before coding the final website. The following are a few wireframes which roughly inspired the final result of the website.
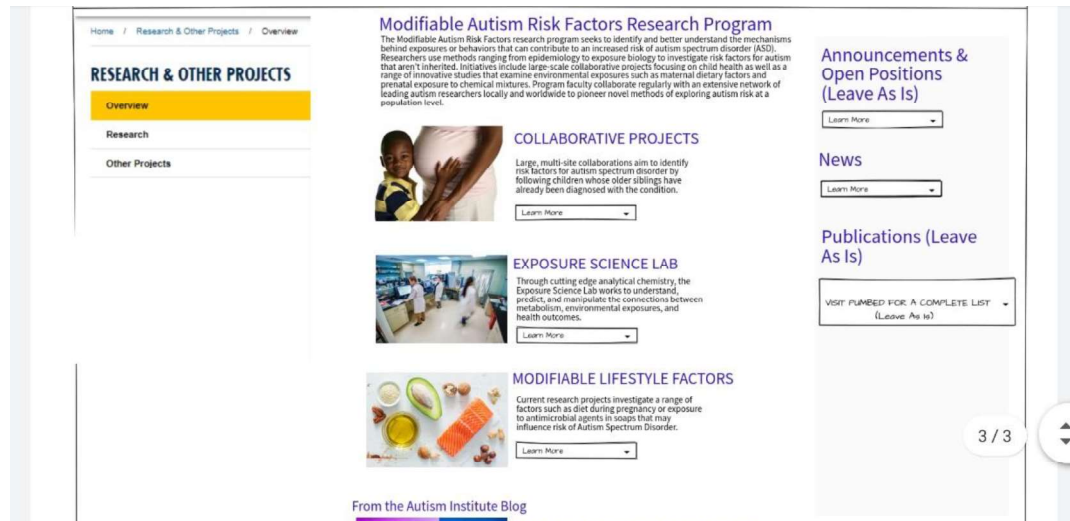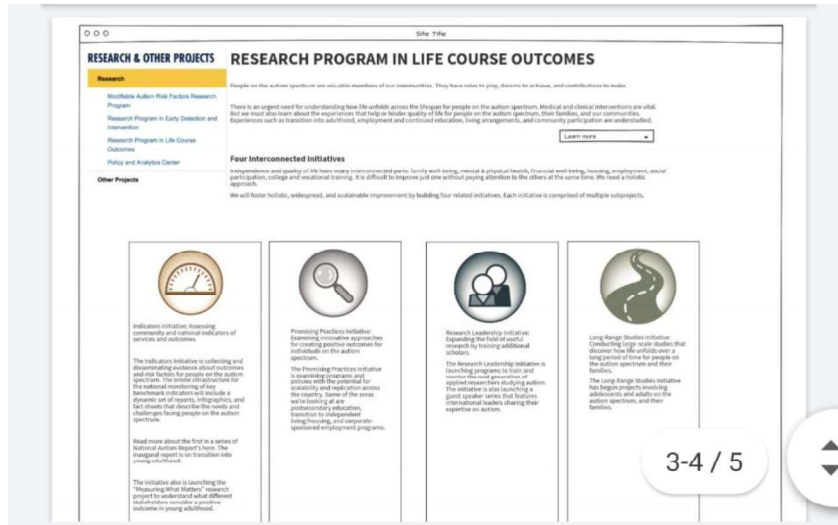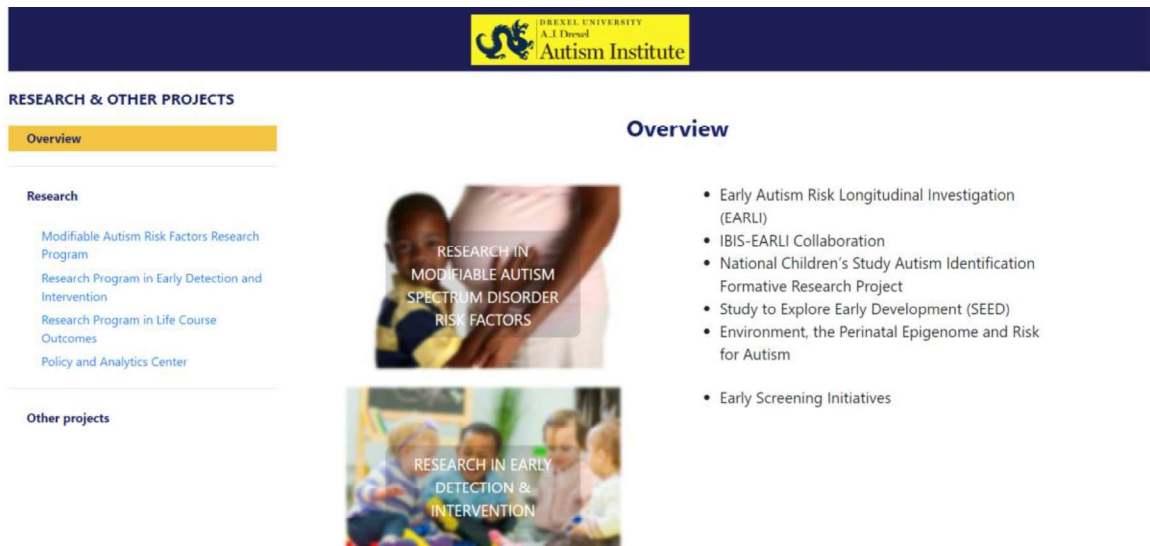

Wireframe

Wireframe

Wireframe

Wireframe

3.2 Final Website Renders

Website

RESEARCH & OTHER PROJECTS

Overview

Research

Modifiable Autism Risk Factors Research Program
Research Program in Early Detection and Intervention
Research Program in Life Course Outcomes
Policy and Analytics Center

Other projects

Modifiable Autism Risk Factors Research Program

The Modifiable Autism Risk Factors research program seeks to identify and better understand the mechanisms behind exposures or behaviors that can contribute to an increased risk of autism spectrum disorder (ASD). Researchers use methods ranging from epidemiology to exposure biology to investigate risk factors for autism that aren't inherited. Initiatives include large-scale collaborative projects focusing on child health as well as a range of innovative studies that examine environmental exposures such as maternal dietary factors and prenatal exposure to chemical mixtures. Program faculty collaborate regularly with an extensive network of leading autism researchers locally and worldwide to pioneer novel methods of exploring autism risk at a population level. .

ANNOUNCEMENTS AND OPEN POSITIONS

LEARN MORE

NEWS

- Multivitamin Use During Pregnancy Linked to Lower Risk of Autism With Intellectual Disability
- Autism Researchers Looking at Baby Teeth to Identify Risk Factors
- Chemicals Banned Decades Ago Linked to Increased Autism Risk Today

SEE ALL NEWS

PUBLICATIONS

Meta-analysis of epigenome-wide association studies in neonates reveals widespread differential DNA methylation associated with birthweight

VISIT PUBMED FOR A COMPLETE LIST

COLLABORATIVE PROJECTS

Large, multi-site collaborations aim to identify risk factors for autism spectrum disorder by following children whose older siblings have already been diagnosed with the condition.

Learn More

EXPOSURE SCIENCE LAB

Through cutting edge analytical chemistry, the Exposure Science

Website

RESEARCH & OTHER PROJECTS

Overview

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Modifiable Autism Risk Factors Research Program
Research Program in Early Detection and Intervention
Research Program in Life Course Outcomes
Policy and Analytics Center

Other projects

RESEARCH PROGRAM IN LIFE COURSE OUTCOMES

People on the autism spectrum are valuable members of our communities. They have roles to play, dreams to achieve, and contributions to make.

There is an urgent need for understanding how life unfolds across the lifespan for people on the autism spectrum. Medical and clinical interventions are vital. But we must also learn about the experiences that help or hinder quality of life for people on the autism spectrum, their families, and our communities. Experiences such as transition into adulthood, employment and continued education, living arrangements, and community participation are understudied.

Learn More

Four interconnected initiatives

Independence and quality of life have many interconnected parts: family well-being, mental and physical health, financial well-being, housing, employment, social participation, college and vocational training. It is difficult to improve just one without paying attention to the others at the same time. We need a holistic approach.

We will foster holistic widespread and sustainable improvement by building four related initiatives. Each initiative is comprised of multiple subprojects.

ANNOUNCEMENTS AND OPEN POSITIONS

LEARN MORE

Indicator Initiative

Assessing community and national indicators of services and outcomes.

The Indicators Initiative is collecting and disseminating evidence about outcomes and risk factors for people on the autism spectrum. The online

Promising Practises Initiative

Examining innovative approaches for creating positive outcomes for individuals on the autism spectrum.

Research Leadership Initiatives

Expanding the field of useful research by training additional scholars.

The Research Leadership Initiative is launching programs

Long-Range Studies Initiative

Website

RESEARCH & OTHER PROJECTS

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Other projects

Research Program in Early Detection and Intervention

Therefore, we focus on three fundamental questions: (1) How do child factors contribute to our ability to modify outcomes through early detection and intervention? (2) How do factors related to specific detection and intervention programs affect our ability to modify outcomes? And (3) How do factors related to the implementation context affect our ability to modify outcomes through early detection and intervention?

PROGRAM LEADER: DIANA ROBINS, PH.D

Program Overview

The goal of the Early Detection and Intervention (EDI) program is to advance a comprehensive research agenda aimed at promoting optimal outcomes for children with ASD through early detection and intervention efforts. Our research approach bridges knowledge across different fields, including public health, psychology, education and policy, in order to provide cohesive and comprehensive answers to the complex challenge of evaluating and implementing successful and detection and intervention programs in the community. A critical framework that informs our research program is the notion that outcomes of children with ASD are shaped by the interplay of child factors (e.g., learning strengths and weaknesses, severity of symptoms, and additional challenges such as anxiety), program factors (e.g., the adoption of evidence-based detection and intervention strategies) and context factors(e.g., community and family-level resources devoted to the implementation of effective programs).

Early Detection

Dr. Diana Robins, Interim Director of the A.J. Drexel Autism Institute, spearheaded recent advances in toddler screening for ASD using the Modified Checklist for Autism in Toddlers (M-CHAT), and its revision, the M-CHAT-R with Follow-Up (M-CHAT-R/F). Evidence indicates that if a standardized screening protocol is implemented during pediatric well-child care visits at 18 and 24 months, including immediate referral of children who demonstrate risk for ASD, the average age of diagnosis can be reduced by two years compared to the national median. In addition, more than three times as many toddlers were flagged for possible ASD risk based on the M-CHAT-R/F compared to the healthcare provider's surveillance, suggesting that the use of a standardized screening tool is essential to promote early detection for the greatest number of children. The M-CHAT-R/F is a brief, cost-effective, parent-report survey

Early Intervention

The EDI program at the A.J. Drexel Autism Institute aims to better link early detection with early intervention research, and to investigate how early intervention programs can be optimized and adapted to fit the needs and resources of children, family, and implementation contexts. Dr. Giacomo Vivanti is the author of "Implementing the Group-Based Early Start Denver Model for Preschoolers with Autism," a manualized intervention focused on the adaptation of evidence-based strategies across public healthcare and educational settings, that has been published in multiple languages, including Chinese. Additionally, his research focuses on understanding "what works for whom, and why" in ASD early intervention, and factors related to individual differences in intervention response. Understanding modifiable factors associated with optimal versus suboptimal outcomes holds the potential to

Website

RESEARCH & OTHER PROJECTS

Overview

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Modifiable Autism Risk Factors Research Program
Research Program in Early Detection and Intervention
Research Program in Life Course Outcomes
Policy and Analytics Center

Other projects

POLICY AND ANALYTICS CENTER

DIRECTOR OF THE ANALYTICS AND POLITICS CENTER: LINDSAY SHEA

There is an urgent need for understanding how life unfolds across the lifespan for people on the autism spectrum. Medical and clinical interventions are vital. But we must also learn about the experiences that help or hinder quality of life for people on the autism spectrum, their families, and our communities. Experiences such as transition into adulthood, employment and continued education, living arrangements, and community participation are understudied.

Click below to learn about Policy and Analytics Center projects

Policy and Analytics Center

Autism Services, Education, Resources and Training Collaborative (ASERT) Eastern Region

Philadelphia autism projects

Meet with PAC team

Website

Above screenshots do not justify the elegance of the actual website that portrays modern design and easy-to-navigate structure for the end users. I recommend visiting the website yourself which is hosted as one of my GitHub repositories:
https://smak06.github.io/drexel-website/index.html

Once the initial website build was finished, the next step was to add images as well as the content for the pages. The challenge we faced was that the content was too elaborative in contrast to the design of the page and the extravagantly inundated information was somewhat redundant for the users. But we were under strict instruction to not temper with any of the textual content. So, we had to circumvent our way around it and let the website have all old information and modernize it simultaneously.

The content for each page was channeled to us by the Drexel team for each webpage individually, thus allowing me to focus on the main programming portion of the task. The Drexel team did an exceptional job at finding images related to the content, as graphics define a major chunk of the new websites.

The website, however, wasn't still quite there yet. We had to meet the requirements specified by the client and we had to please them. The Drexel team had a better idea of what was exactly required, than I. So, I had to keep adding modifications according to what was asked and I had to keep checking with the Drexel team whether the updates are being meaningful or not. For, straightforward display of what the actual site would look like, I used the service of GitHub pages to host the website live, having already hosted my code on GitHub to be shared with everyone. I pushed changes to the code and they were live the next minute, thus allowing everyone to be updated with what was going on. It turned out to be a cake walk once all of this was in place. The website to-date is still hosted via my GitHub account and the link for same (as provided above as well) is:
https://smak06.github.io/drexel-website/index.html
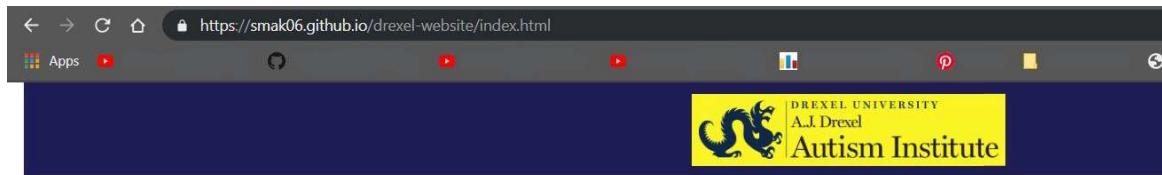
Live Website

CHAPTER IV: CONCLUSION & FUTURE SCOPE

4.1 Conclusions

The barrier for me was a thumbs up from the Drexel team and I broke through it with flying colors. The website (as quoted) "was far better than the wireframe renders" and the work was exactly as asked by the client.

The project met its aim as the website clearly testifies the same.

The major research work that was involved in the whole process was to understand what made such websites modern and captivating to the user demographic that they intend to target. We found that minimalism works every-time and everywhere.

Apart from everything mentioned in this project I really don't find any other conclusion relating to the research work in the project. I have covered everything from the nits and grits to the big picture.

The following testifies the amount of work that went into building this project:

Total Number of Exchanges

Text Messages	726
Emails	74
WhatsApp	254
Zoom Conference	10
Phone Calls	11
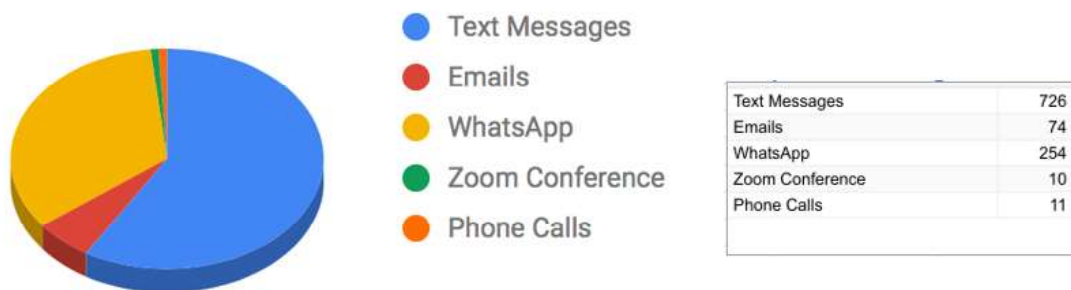
Communication with the Drexel Team as well as with Amity

4.2 Future Prospects

Unlike the peremptory opinion that the website once checking all boxes of requirement, cannot have any further upgrades, there is actually a lot that can be done. The website is static and can have several upgrades regarding the whole user experience design along with a better management of not only the content but the structure itself. If given the creative freedom and time, the website can be transformed into a far better variant.

APPENDICES

The following are the main challenges we faced overall through the lifecycle of the project:

1. Communication: Proved to be the most crucial factor in determining how are project was progressing. Sometimes the communication between the Drexel team and Amity side rendered pointless due to technical differences.

2. Wireframe to Website: The wireframes were designed by the students of Drexel who lacked the basic design knowledge to even fulfil the bare minimum requirements. This created a challenge initially. They had to go about and learn how to make their designs appropriate for them to be able to converted to hard coded webpages.

3. Client: The requirements specified by the client were congruous to their old website which put us in a tough situation as we had to come up with ways to keep the client happy as well as upgrade the website according to modern mobile standards.

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