WordPress Site For Humanities And Engineering SIG

TEAM: SnapPapers

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Project sponsor

Dr. Tim Maciag (ENSE 871 Professor)

Business need/opportunity

The Engineering & Humanities Special Interest Group (SIG) does not have its own website. The SIG has a page under the main CEEA website where it simply shows the details of the SIG.

The SIG is looking forward to gathering new members and increasing the number of collaborators but is limited by their website. With the current state of the webpage, the SIG cannot promote themselves. Current members of the SIG find it difficult to use the website, have a lack of understanding of the capabilities of the website, and do not log in to the webpage regularly as they do not have any features that they are interested in using. The website does not showcase the researchers, their skills and interests, or past work and research. To enhance the experience for the researchers and to enable the growth of the SIG, a new website with the following features is proposed;

- Ease of use, accessibility, and minimalistic design
- Visualizations
  - Graphs and maps
  - Dynamic
- Promoting networking and collaboration
- Self-manageable profiles

Reflections on project planning, execution & closing

Northstar & Carryover customers

- NorthStar (target) customer:

    - Engineering and Humanities SIG members

    - Professionals (with similar interests) interested in collaborating with SIG members

    - People interested in joining the Engineering and Humanities SIG

- Carryover customers:

    - Other SIGs

    - People who would explore the content only

    - People looking to read research papers of SIG members

Assumptions made and constraints uncovered

It was assumed that the customers wanted a space that promotes collaboration between researchers and show it to anyone interested in what is the Humanities and Engineering SIG researching and developing without necessarily making a social media, the customer would like a website accessible for everyone, but also with special benefits or accesses for those members that are part from the Humanities and Engineering SIG.

The main constraint that the project had is that the solution needs to be a website developed in WordPress. The project also needed to be developed in just over 2 months (From February 2nd, 2024 to April 12th). Another constraint that the project had was the interaction with the customer, the updates were managed weekly in 12-minute meetings including demonstrations and QA. Another constraint that was not very evident was the team selection because the team members were selected randomly, so the team skills had to be adapted to random skills instead of selecting members with specific skills for specific roles.

Key findings from affinity diagramming and empathy mapping

From the first affinity diagram (Appendix A), it is clear that the customers had an idea of what they wanted from the beginning, maybe some features like events and conferences were not considered in future iterations, but the final WordPress solution features follow most of the customer's needs.

Also, new features were added during the project development adapting to the customer comments and new observations, like the Word Cloud functionality.

From the empathy mapping (Appendix B), the customers were communicating their intentions and feelings before having the website, and after the feedback on the final solution, most of their feelings and thoughts about their website's organization were positive. The empathy map provided insight into the client. This enabled the designers to understand how important certain things were for the clients and how some features the client did not mention would be useful.

Initial & evolution of SnapPaper's USM/MVP

The User Story Map designed (Appendix C) was loyal to the final MVP solution.

The modifications to the original design done during the project development were:

- The registration process is handled externally by the CEEA administrator
  - This was discussed with the clients and it was noted that SIG members should be registered separately with CEEA before being given access to the SIG website.
- The message feature was replaced by the forum page
  - The message feature was intended as a direct one-to-one communication method. Over the course of the project, it was noted that the clients would not require this as this can be handled via emails as emails are already available on the websites. Instead, the clients preferred a space where they could discuss and have conversations with like-minded individuals. Therefore a Forum was used to replace the chat feature.
- The bubble chart was changed to the word cloud of research interests
  - The bubble chart was an interesting idea but consumed a lot of screen space for each item, therefore fewer items can be displayed at a given time. Therefore a word cloud was proposed as it is denser.

Other than the previous points mentioned, all the planned features at the User Stroy Map were completely integrated into the final MVP.

Prototyping activities and usability evaluation findings

The prototyping was done using Figma. The prototype was useful for the customers to have a representation of what we are planning with the Minimum Viable Product. The idea of the prototype respected the structure and intended functionality of the final MVP.

The most valuable feedback that we received was about the components and linking of information, for example in this way, the customer could realize that a chat feature is not needed, the customer liked the idea of interaction with the research interests bubble chart, but maybe the bubble chart was not the best approach, so that helped to design a better chart, like an interactive Word Cloud chart.

The prototype used some common affordances like taking the information in field label boxes, the usage of metaphorical icons like messages and search functionalities, clear call-to-action buttons to guide the user's actions, and general website patterns like the navigation bar, the login flow, and the website structure distribution.

The gestalt principles followed in the prototype are the symmetry of elements displayed, the Pragnanz pattern with the SnapPapers logo, and similarities of components so the user can easily relate them.

As a constraint, the website gives access capabilities of customizing the profiles, adding papers, and participating in the forums only for those users who are members of the Humanities and Engineering SIG.

The prototype is shown in Appendix D.

Final WordPress solution

At the final WordPress solution homepage, the Word Cloud is displayed showing all the research interests that all the members have allowing the user to discover them and also take a look at people with specific research interests interactively. The customer liked the interaction and functionality of the Word Cloud (Appendix E - Interests word cloud).

The website will randomly show three (3) researchers, so the users can discover different ones every time they enter the webpage. Each card is designed to be similar following the Similarity Gestalt principle (Appendix E - Researcher highlights).

A geographical map is implemented to show all the universities collaborating at the Humanities and Engineering SIG, the universities' locations allow the users to discover the researchers of each university (Appendix E - Geographical map).

The publications trends chart displays all the publications frequency of each year from the proceeding of the CEEA (Appendix E - Publication trends).

The About Us and Contact Us sections communicate the idea of the Humanities and Engineering website and allow the user to contact the organization in case they would like further information about a topic (Like being a SIG member) (Appendix E - Contact form).

The Network page groups every research by research interest and it gives a general search bar so the user can research people by name, research interest, university, or related keywords. The groups (Gestalt Principle) are useful for the discoverability of the researchers (Appendix E - Explore researchers).

The Publications page displays all the papers web scrapped from the CEEA proceedings website displaying the paper title, authors, publication year, and name of the proceeding. All of this with their correspondent linking to the source of information (CEEA Proceedings) (Appendix E - Publications page).

The forums page is a space that promotes the exchanging of ideas and plans, the user can open new discussion topics and participate in active conversations with other members (Appendix E - Forums).

Each researcher has their custom information displayed on their profile. They can share their positions, university, location, useful contact links, descriptions of themselves, their research interests, and a list of publications made (Appendix E - Researcher profile).

Reflections on project results

Opinions about the project

The project provided an interesting opportunity as the outcome was not clearly defined. Understanding the client's requirements when they do not have a clear idea of the final product was challenging. The team had to work together with the clients to understand their requirements and to identify the features that would assist the clients in meeting their needs. This allowed the team to be more creative in proposing features.

What went well during the project?

Even though the team was selected randomly, the team members worked well with each other. The team had good spirits throughout the project and collaborated and contributed to making the outcome a reality.

What didn't go well during the project?

During the project, multiple hard challenges presented themselves. The team had great communication and assisted each other in overcoming the challenges. There were no tasks that could be categorized as "didn't go well" as the team was capable of delivering the features promised. As for the most challenging obstacle faced, it would be the "edit profile" feature as it consumed a lot of time and custom code but the team was able to improve it to a level that it can be used without any issues.

The success of translating prototypes into WordPress reality

During the prototype demo, many features were proposed to the clients. All the features that were proposed were implemented successfully. Most of the features were implemented using freely available plugins and configuring them whereas some were implemented using custom code.

The usefulness of people-centered design ideas from lectures

The people-centered design ideas state that designers should always look at how users will use the product. The interactive word cloud provides a playful experience where the user can explore the wide range of areas that the researchers are interested in. This is a great people-centered design example as it provides the user with feedback and information. The geographical map was another example of great people-centered design as it visualizes the locations of the researchers making it easier for users to understand. The map was interactive therefore users would get instant feedback while getting the information they are looking for. There were clear signifiers to indicate where the researchers were located. Further, the profile

of the researchers had a similar design to the LinkedIn and Facebook pages. This was intended as the user would find it easier to understand the contents. The designers intend to use natural mappings of the users to reduce the learning curve in using the website. The website was structured to minimize the affordances present on the screen at a given time by spacing out the content so that only one section is on screen at a given time. This allows the user to focus on the information at hand and not be distracted by unnecessary information.

What would you do the same on future projects?

The design of a prototype using a wireframe was especially useful in understanding the client's requirements and obtaining feedback for ideas that the designers had planned for the product. This provided a great playground to create different types of designs without using a lot of time.

What would you do differently on future projects?

Time management was a major constraint. As the project had a very short period of just over 2 months, most features were rushed. While the client feedback for the features could only be obtained every 2 weeks, some features that were planned by the designers had to be modified after obtaining the feedback to suit the client better. Managing the time and making a Gantt chart on how each feature will be addressed will assist in streamlining the project while managing the meeting with clients more effectively will allow for more time spent on working on important features.

Summarize opportunities and design ideas for future work.
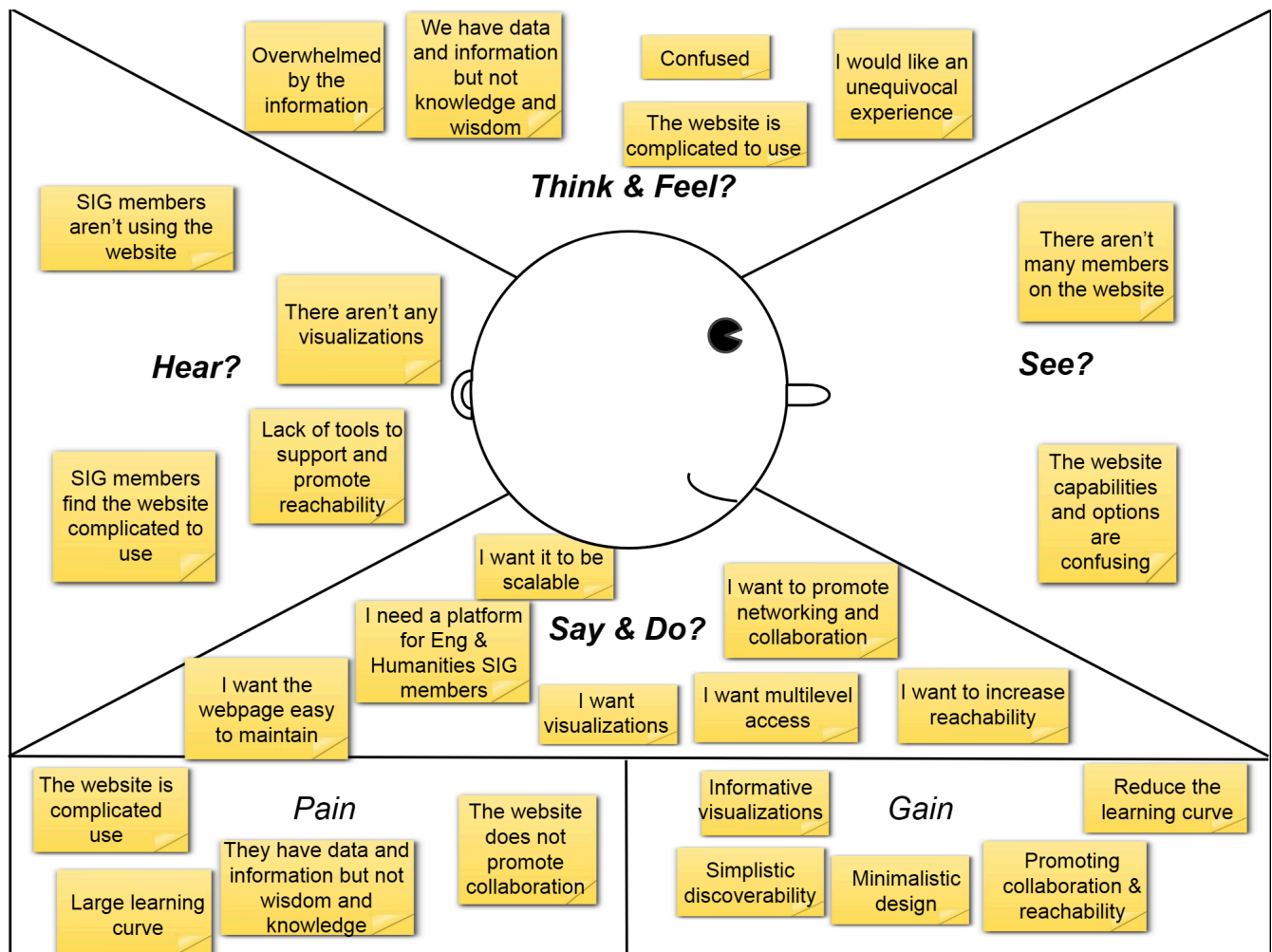
The website that was created for the Humanities and Engineering SIG is at a great stage at the moment. The website has all the required functionalities that are useful to the SIG members. A feature that is lacking at the moment would be manually linking and unlinking research papers of SIG members. As the automated research paper population was handled by scraping the website, the team did not spend time on the manual linking/unlinking. Although all the critical features were implemented, the website is not optimized to work on different screen sizes and the website responsiveness has not been handled. These are very important areas to work on next as they will improve the user experience significantly. Light bugs and issues are always common when developing a minimal viable product (MVP) therefore user testing must be conducted thoroughly to identify any potential bugs.
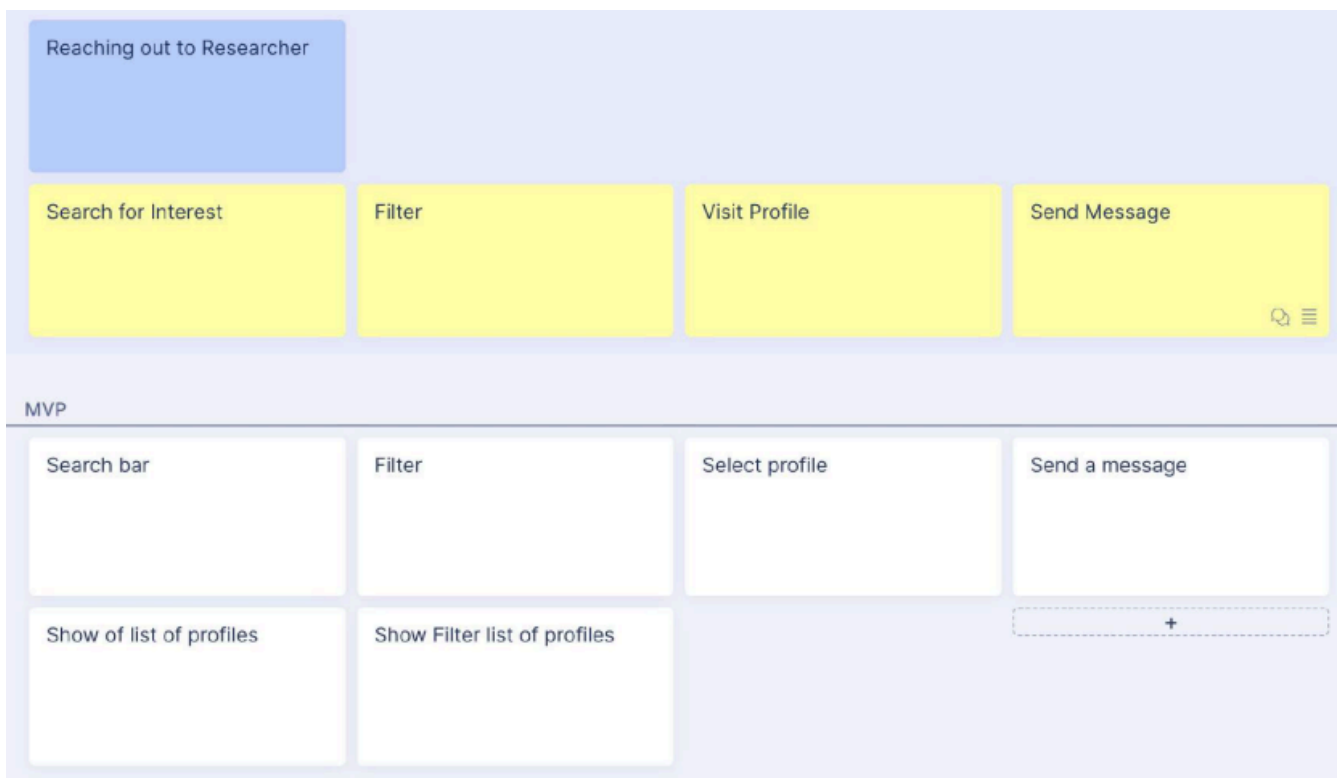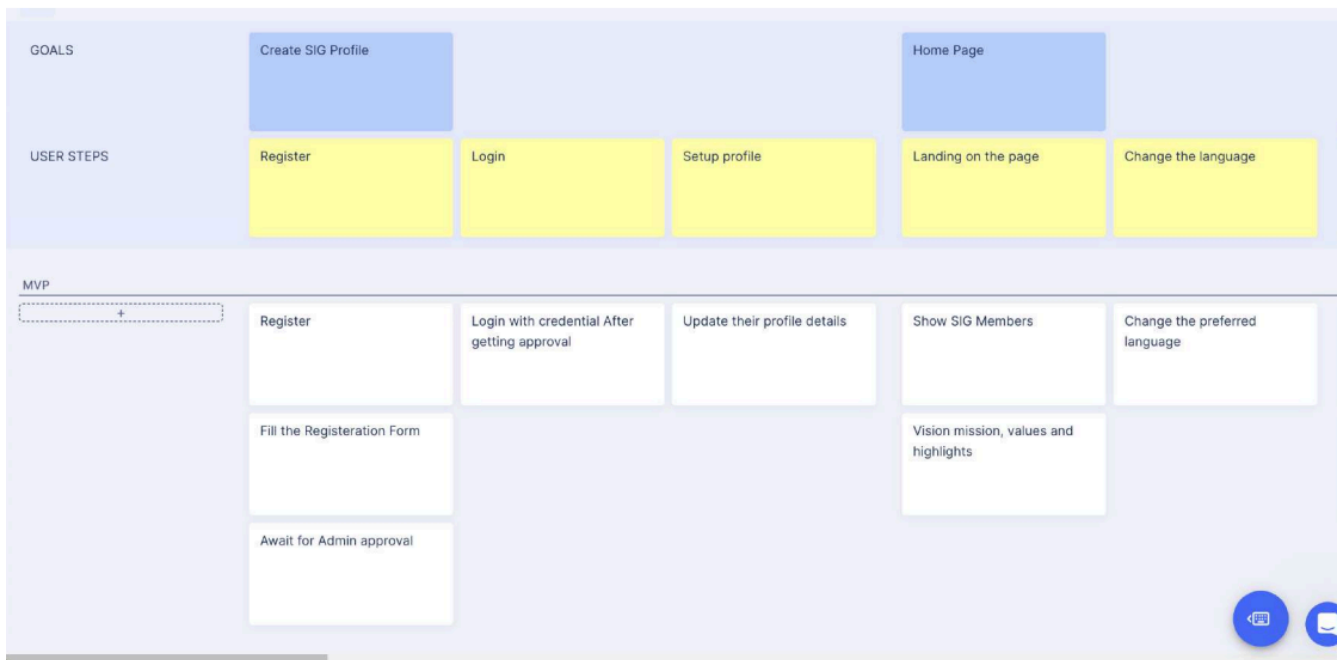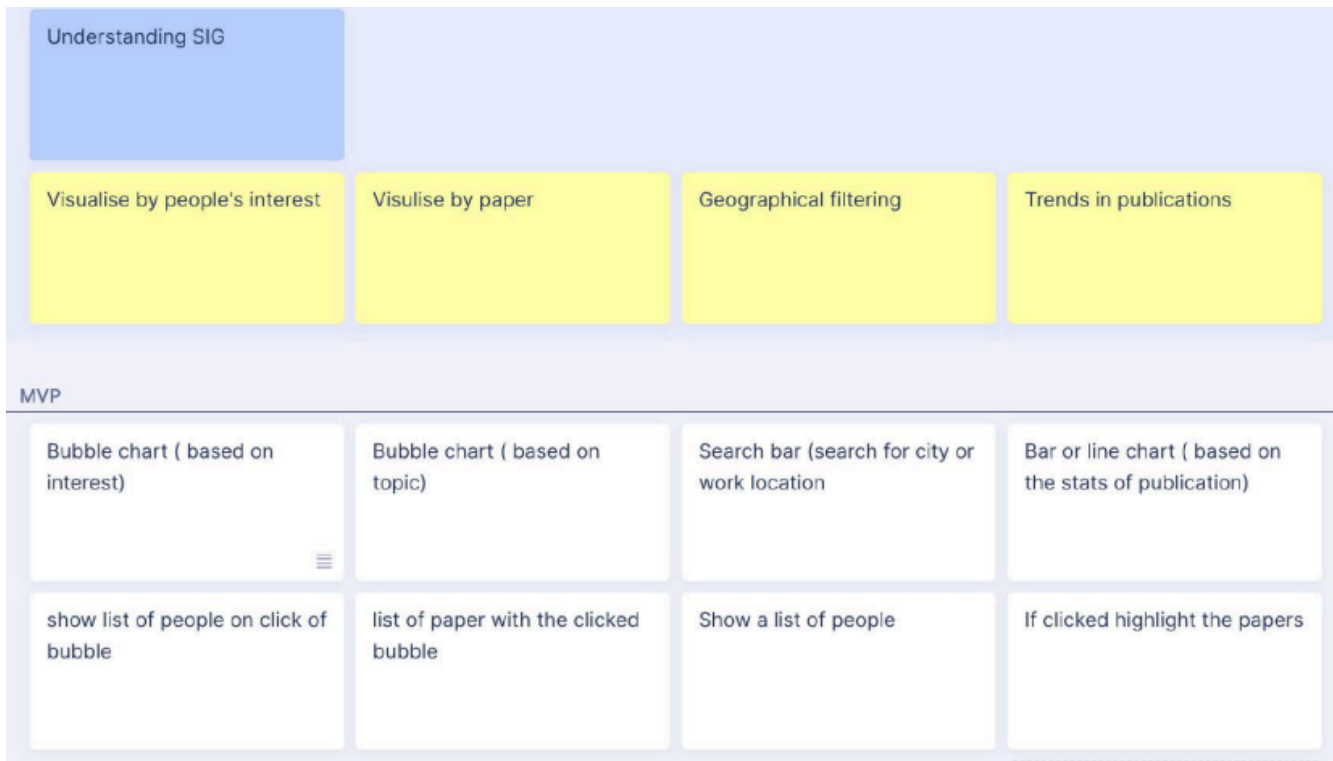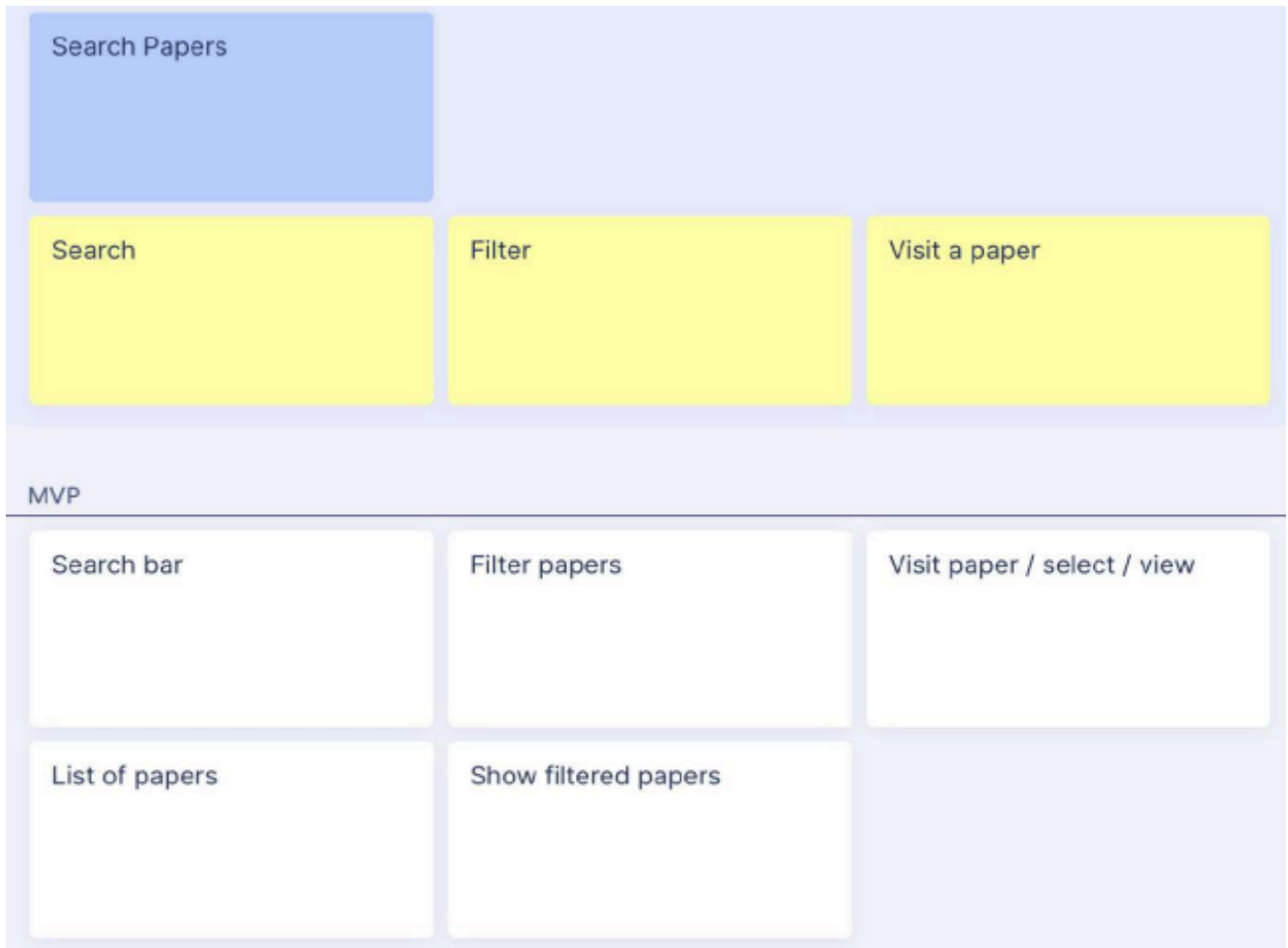
Appendix

A. Affinity Diagram

Other Features	Inclusiveness	Social Interactions	Data Visualization	SIG Members	Interconnect Papers	Accessibility	Login and Register Features	Pages
Integrate with research paper like google schoar	Inclusiveness for everyone	Discover People	Visual representation of members research interest	Have SIG members page (Individual)	Research interest categorization based on the research papers and interest in the people.	Easy to access.	Login as administrator	Show Conferences
Register to a Conference	Bilingual	Geographical Networking	Different types of data visualization	Each SIG member is responsible for their own member page.	Distribution of papers (Categorization and searching). Topic based distribution.	Ease of use and minimal work for users	Login as SIG member	Show Events
Scale and used by other SIGs		Social Interactions like chat app		Members to add their highlights. i.e. Username photo interest, other artifacts		Papers easy to find.	Public user, SIG Member, Admin User	Inform SIG member about their own informations
Targeting audience: Students, Researchers in Canada, SIG members		Recommendation system to match likeminded people.		Different Artifacts related to Individual Opinions Research paper, workshops, videos.		Papers related to conference.	Register as SIG member.	About page of each author
Setting up an admin user		Enabling Coordination with other members						
Feedback		Networking						
		Bridging SIGs						

B. Empathy Map

Overwhelmed by the information

We have data and information but not knowledge and wisdom

Confused

I would like an unequivocal experience

The website is complicated to use

Think & Feel?

SIG members aren't using the website

There aren't many members on the website

There aren't any visualizations

Hear?

See?

Lack of tools to support and promote reachability

SIG members find the website complicated to use

The website capabilities and options are confusing

I want it to be scalable

I want to promote networking and collaboration

I need a platform for Eng & Humanities SIG members

Say & Do?

I want the webpage easy to maintain

I want visualizations

I want multilevel access

I want to increase reachability

The website is complicated use

Pain

The website does not promote collaboration

Informative visualizations

Gain

Reduce the learning curve

They have data and information but not wisdom and knowledge

Large learning curve

Simplistic discoverability

Minimalistic design

Promoting collaboration & reachability

C. User Story Map

GOALS

| | Create SIG Profile | | | Home Page | |

USER STEPS

| | Register | Login | Setup profile | Landing on the page | Change the language |

MVP

	Register	Login with credential After getting approval	Update their profile details	Show SIG Members	Change the preferred language
	Fill the Registeration Form			Vision mission, values and highlights	
	Await for Admin approval				

Reaching out to Researcher

| Search for Interest | Filter | Visit Profile | Send Message |

MVP

| Search bar | Filter | Select profile | Send a message |
| Show of list of profiles | Show Filter list of profiles | | |

Search Papers

Search	Filter	Visit a paper

MVP

Search bar	Filter papers	Visit paper / select / view
List of papers	Show filtered papers	

Understanding SIG

Visualise by people's interest	Visulise by paper	Geographical filtering	Trends in publications

MVP

Bubble chart (based on interest)	Bubble chart (based on topic)	Search bar (search for city or work location	Bar or line chart (based on the stats of publication)
show list of people on click of bubble	list of paper with the clicked bubble	Show a list of people	If clicked highlight the papers

Update profile					
Login	Click on Edit Profile	Updating basic Info	Update Profile picture	Update work address	Update Research interest
Login with you creds	Edit profile	update basic info	Upload profile picture	Update work address	Update research interest

Viewing Messages		Requests for admins
Primary inbox	Secondary inbox	Approve profiles
Reply	Reply chat like	Review information
		Accept or decline
		Send an email back to the user with status

D. Wireframe prototype

E. Final WordPress solution

Interests word cloud

Researcher highlights

Humanities & Engineering
Special Interest Group

English

Timothy Maciag

Dr. Tim Maciag is an Assistant Professor in Software Systems Engineering (SSE) at the University of Regina. He teaches undergraduate

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Kari Zacharias

My research explores engineering knowledge and identity. In particular, I'm interested in the ways that engineering interacts with other ways

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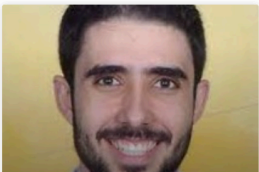
Renato Bezerra Rodrigues

Renato is a Ph.D. candidate at the University of Manitoba, where he merges engineering, philosophy, and education to research the

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Geographical map

Where our researchers are

University of British Columbia

University of Manitoba

University of Regina

University of Ottawa

University of Toronto

Ottawa

Toronto 2

New York

Washington

United States

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Publication trends

Publications

Cumulative research paper publications.

A total of 1832 papers has been published since 2004 at the **Proceeding of the Canada Engineering Education Association (CEEA)**.
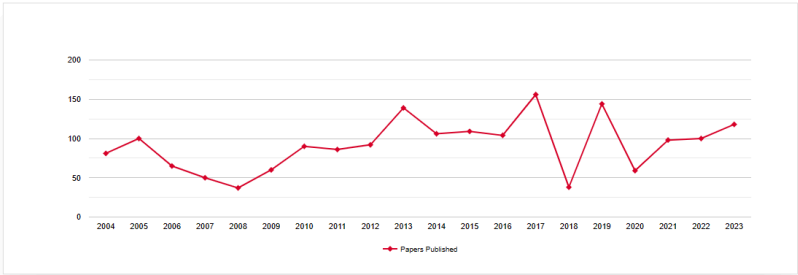
Explore more

Contact form

Who we are

A network of educators, academics and artists working within or studying the intersection between humanities and engineering; engineers who engage in areas beyond engineering, and non-engineers who bring their perspectives to an engineering environment.

Join the network!

Name

Email

Message

Send

Explore researchers

Humanities & Engineering Special Interest Group

Humanities and Engineering SIG Members

Discover researchers attached to the Humanities and Engineering special interest group.

Enter Search Keyword   **SEARCH**

AAEE

Jillian Seniuk Cicek

My research work includes Indigenous initiatives, methodologies, and pedagogies in engineering education; engineering student perspectives, identity, and learning; epistemological tensions

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Acceptance

Publications page

Humanities & Engineering Special Interest Group
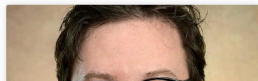
Publications

Find all the details from the papers published at the **Proceedings of the Canadian Engineering Association (CEEA)**

Show 10 entries   Search:

Paper ID	Paper Title	Authors	Year	Proceeding
0	Assessing the Gaps between Alberta K-12 Competency Development and University of Alberta Engineering Introductory-level Graduate Attribute Indicators	Shuai Yu, Jason Carey	2023	Proceedings of the Canadian Engineering Education Association (CEEA-ACEG) Conference June 17-21 Kelowna, BC
1	Launching new sustainability-focused engineering economics modules: materials, instructor reflections and student feedback	Tamara Etmannski, Gabriel Potvin	2023	Proceedings of the Canadian Engineering Education Association (CEEA-ACEG) Conference June 17-21 Kelowna, BC
2	An Extra-Curricular Challenge Co-Developed with Industry: A Learning-Focused Hackathon	Chris Rennick, Vidyasagar Rajendran, Silas Ifeanyi	2023	Proceedings of the Canadian Engineering Education Association (CEEA-ACEG) Conference June 17-21 Kelowna, BC
3	Development and application of competency mapping for equity, diversity, inclusion, and Indigeneity in out-of-curriculum learning opportunities for engineering students, staff, and faculty	Jessica Wolf, Agnes d'Entremont	2023	Proceedings of the Canadian Engineering Education Association (CEEA-ACEG) Conference June 17-21 Kelowna, BC
4	Using senior undergraduate students as coaches in an introductory chemical engineering design course	Roza Vaez Ghaemi, Gabriel Potvin	2023	Proceedings of the Canadian Engineering Education Association (CEEA-ACEG) Conference June 17-21 Kelowna, BC
5	Instilling SDG Considerations in Undergraduate Design Capstone	Tate Cao	2023	Proceedings of the Canadian Engineering Education Association (CEEA-ACEG) Conference

Forums

Interests   Network   Map   Publications   About Us   Forum   Profile   Log Out

English ⌄

Topics

	Topic	Replies	Since
	CEEA-ACEG 2022 Conference 2022 CEEA-ACEG conference discussion Read More Posted by: Anji	0	April 9, 2024
	CEEA-ACEG 2023 Conference Let's discuss about the 2023 conference Read More Posted by: Anji	2	April 9, 2024
	Let's talk about how important human-computer interaction (HCI) will be in the future HCI will assist humans in reaching the next stage of evolution Read More Posted by: Anji	1	April 5, 2024

Add new topic

Humanities & Engineering
Special Interest Group

Researcher profile

Jillian Seniuk Cicek (She/Her)

Assistant Professor | Centre for Engineering Professional | Practice and Engineering Education

🏛 University of Manitoba

🧭 Manitoba

✉ Email

in LinkedIn

About

My research work includes Indigenous initiatives, methodologies, and pedagogies in engineering education; engineering student perspectives, identity, and learning; epistemological tensions in engineering education; and engineering competencies required for engineering practice.

I am a white settler woman who grew up as a visitor on Treaty One Territory and in the Homeland of the Métis Nation, in the place now known as Winnipeg, Manitoba, Canada. I am a mom, wife, sister, daughter, aunt, friend, and mentor. I am a visual artist, writer, educator, and researcher, and I teach communication, engineering education research, career design, and decolonizing engineering courses. I am grateful for my husband and our three kids, our families and friends, our pets, and the opportunity to work in this field. I love nature and play ringette with a group of neighborhood mothers on a team called, The Awesomes!

Dr. Seniuk Cicek is currently seeking graduate students with an interest in engineering education research. Prospective students should review the information about the Graduate Specialization in Engineering Education available on the website of the Centre for Engineering Professional Practice and Engineering Education and contact her with a brief description of their research interest.

Research Interests

Engineering education   CEEA   Creative Writing   AAEE   Visual Arts   Epistemological Tensions   Writer   Decolonization   EER   REES

Publications

Find all the details from the papers published by Jillian Seniuk at the Proceedings of the Canadian Engineering Association (CEEA)

Show [10 ▾] entries   Search: [ ]

| Paper ID	Paper Title	Authors	Year	Proceeding
16	Experiences of Engineering Education Research Faculty Members in Canada: A Collaborative Autoethnography	Stephanie Hladik, Kari Zacharias, Jillian Seniuk Cicek	2023	Proceedings of the Canadian Engineering Education Association (CEEA-ACEG) Conference June 17-21 Kelowna, BC
22	Towards Defining Threshold Concepts for Decolonizing Engineering	Janel Wyllie-Runner, Jillian Seniuk Cicek, Kari Zacharias	2023	Proceedings of the Canadian Engineering Education Association (CEEA-ACEG) Conference June 17-21 Kelowna, BC
24	Engineering leadership and cultural awareness development through a student-led workshop	Renato Rodrigues, John Donald, Jillian Seniuk Cicek, Faith Miller-Koren, Yasamin Jahani Kia, Sarah Donald	2023	Proceedings of the Canadian Engineering Education Association (CEEA-ACEG) Conference June 17-21 Kelowna, BC
45	Increasing Student Awareness of Complex Problems Through Systems Thinking: How (Re)Framing Can Lead to Identifying the Core Problem	Renato Rodrigues, Kush Bubbar, Jillian Seniuk Cicek	2023	Proceedings of the Canadian Engineering Education Association (CEEA-ACEG) Conference June 17-21 Kelowna, BC
61	The Cognitive Science of PowerPoint Part III: Pointing out Cognitive Biases	Jeffrey Paul, Jillian Seniuk Cickek	2023	Proceedings of the Canadian Engineering Education Association

F. WordPress Theme and Plugins

1. Advanced Custom Fields PRO

    ● Last Updated: 07-April-2024

    ● Active Installations: Millions of Users

    ● Purpose:

        ○ Advanced Custom Fields (ACF) turns WordPress sites into a fully-fledged content management system by giving you all the tools to do more with your data.

        ○ Use the ACF plugin to take full control of your WordPress edit screens, custom field data, and more.

2. Advanced Custom Fields: Extended

    ● Rating:

        ○ AVERAGE RATING
        ★★★★★
        (based on 125 ratings)
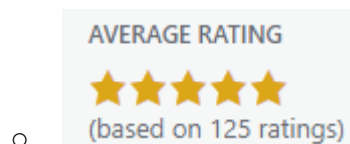
    ● Last Updated: 5 months ago

    ● Active Installations: 80,000+

    ● Purpose:

        ○ All-in-one enhancement suite that improves WordPress & Advanced Custom Fields. This plugin aims to provide a powerful administration framework with a wide range of improvements & optimizations.

3. All-in-One WP Migration

    ● Rating:

        ○ AVERAGE RATING
        ★★★★½
        (based on 7,367 ratings)
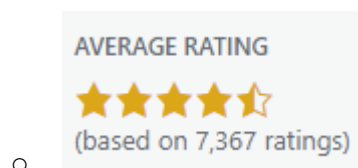
    ● Last Updated: 1 month ago

    ● Active Installations: 5+ Million

- Purpose:

  - Introduced in 2013 and used by over 60 million websites, All-in-One WP Migration is verifiably one of WordPress' most trusted and utilized plugins for moving websites with absolute ease.

  - Intently built with the non-technical user in mind, All-in-One WP Migration comes loaded with newbie-friendly functions that allow you to migrate your WordPress website with little to no technical knowledge or experience.

4. BuddyForms

- Rating:

  - AVERAGE RATING

    ★★★★★
    (based on 180 ratings)
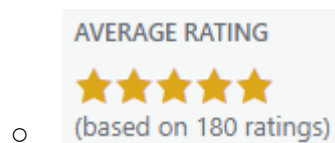
- Last Updated: 3 weeks ago

- Active Installations: 1,000+

- Purpose:

  - Manage your WordPress content effortlessly with BuddyForms, a plugin that simplifies form creation and content management.

5. BuddyForms Advanced Custom Fields

- Rating:

  - AVERAGE RATING

    ★★★⯪☆
    (based on 4 ratings)
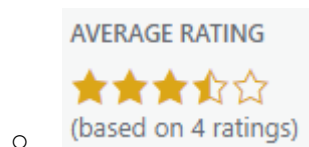
- Last Updated: 2 months ago

- Active Installations: 300+

- Purpose:

  - ACF for the backend and BuddyForms for the frontend. ACF is the preferred choice for creating post meta boxes for the edit screen in the WordPress backend (wp-admin). It comes packed with tons of great form elements and features.

- ○ ACF Frontend Submissions. Make your admin edit screen accessible for your users in the front end without the need to switch to the admin backend. BuddyForms ACF works with all ACF Extensions and BuddyForms Extensions and lets you create extremely powerful solutions that are fully accessible from the front end.

6. BuddyPress

- ● Rating:

    - ○
    AVERAGE RATING
    ★★★★☆
    (based on 365 ratings)
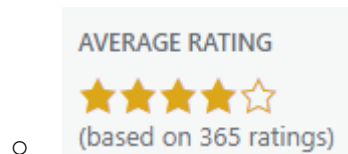
- ● Last Updated: 2 weeks ago

- ● Active Installations: 100,000+

- ● Purpose:

    - ○ BuddyPress is a suite of components that are common to a typical social network and allows for great add-on features through WordPress's extensive plugin system.

    - ○ Aimed at site builders & developers, BuddyPress is focused on ease of integration, ease of use, and extensibility. It is deliberately powerful yet unbelievably simple social network software, built by contributors to WordPress.

    - ○ Members can register on your site to create user profiles, have private conversations, make social connections, create and interact in groups, and much more. Truly a social network in a box, BuddyPress helps you build a home for your company, school, sports team, or other niche community.

7. Code Snippets

- ● Rating:

    - ○
    AVERAGE RATING
    ★★★★⯪
    (based on 428 ratings)
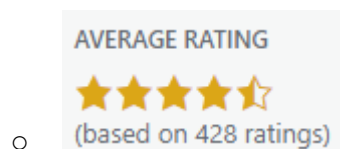
- ● Last Updated: 4 weeks ago

- ● Active Installations: 900,000+

- Purpose:

  - Code Snippets provides an effortless way to enhance your WordPress site.

  - Upgrade to Code Snippets Pro for complete CSS, JavaScript, Gutenberg, Elementor and cloud synchronisation integrations. Elevate your snippets experience now!

  - Say goodbye to the hassle of tweaking your theme's functions.php file and downloading endless plugins – Code Snippets simplifies the process!

  - A snippet is like a mini-plugin for your WordPress site, providing added functionality without the clutter.

  - Unlike other solutions that involve dumping code into your functions.php file, Code Snippets offers an intuitive graphical interface for seamless integration and real-time execution. Managing snippets is as easy as activating and deactivating plugins, only without the bloat and overhead.

8. Conditional Menus

   - Rating:

     -
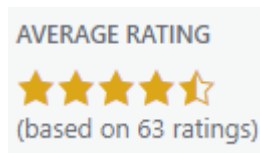
   - Last Updated: 3 months ago

   - Active Installations: 70,000+

   - Purpose:

     - Conditional Menus is a simple yet useful WordPress plugin by Themify, which allows you to swap the menus in the theme as per specific conditions. In short, you can have different menus in different posts, pages, categories, archive pages, etc. It works with any WordPress theme that uses the standard WordPress menu function.

9. Discussion Board

   - Rating:

AVERAGE RATING

★★★★⯪

(based on 39 ratings)
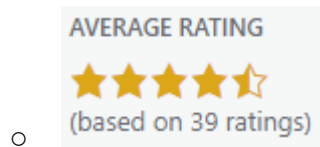
- Last Updated: 7 months ago

- Active Installations: 3,000+

- Purpose:

  - Discussion Board is an easy way to add a forum to your WordPress site. It has a one-click installation and stacks of essential features that make it the leading WordPress forum plugin. In brief:

  - Users can register and log in via a front-end form

  - Users post new forum topics via a simple form

  - Each forum topic is displayed on its own page where other users can reply

10. Easy Google Maps

- Rating:

AVERAGE RATING

★★★★⯪

(based on 252 ratings)
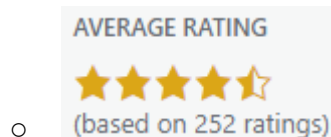
- Last Updated: 3 weeks ago

- Active Installations: 30,000+

- Purpose:

  - Create Easy Google Maps in a minute with Easy Google Maps WordPress plugin. Google Map markers with any media: video, images, links, text descriptions. Add Google Maps with a shortcode, open it in a popup or use Google map widget. An ultimate solution to display Google map on the contact page, routes, real estate, delivery areas and more.
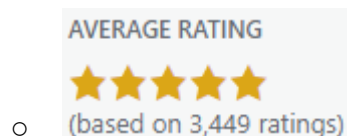
11. Elementor

- Rating:

AVERAGE RATING

★★★★½ (based on 6,757 ratings)
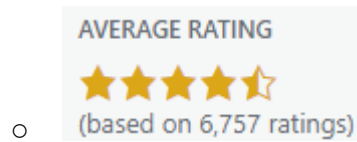
- ● Last Updated: 10-April-2024

- ● Active Installations: 5+ Million

- ● Purpose:

  - ○ Elementor, the leading WordPress website builder, empowers you to build professional, pixel-perfect websites. With an intuitive, no-code drag-and-drop interface, you can build any website.

  - ○ Revolutionize the way you build websites with Elementor AI, a native AI integration. Create complete sections, original text, code, and images instantly, or reference another website to recreate its layout in your website.

  - ○ Unlock all features with Elementor Pro.

12. Elementor Pro

- ● Last Updated: 2 years ago

- ● Purpose:

  - ○ Elementor Pro adds new features to the Elementor Page Builder plugin. Control your conversions, your user engagement, and your entire website, from a page builder.

13. Essential Addons for Elementor

- ● Rating:

AVERAGE RATING

★★★★★ (based on 3,449 ratings)

- ● Last Updated: 09-April-2024

- ● Active Installations: 2+ Million

- ● Purpose:

  - ○ Enhance your Elementor page-building experience with 90+ creative elements and extensions. Add powers to your website builder using our

easy-to-use Elementor widgets and ready template which were designed to make your next WordPress page and post design easier and prettier than ever before.

14. Essential Addons for Elementor - Pro

- Active Installations: 2 Million+

- Purpose:

    ○ Supercharge your Elementor page-building experience with Essential Addons PRO. Get your hands on exclusive elements such as Instagram Feed, Protected Content, Smart Post List, and many more

15. Google Maps CP

- Rating:

    ○ AVERAGE RATING
       ★★★★☆
       (based on 32 ratings)
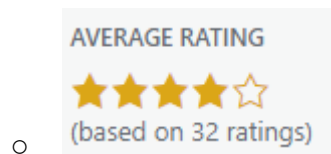
- Last Updated: 4 weeks ago

- Active Installations: 5,000+

- Purpose:

    ○ Google Maps CP Allows to associate geocode information to posts and display it on a map. Google Maps CP display the post list as markers on the map. The scale of the map is determined by the markers, to display distant points is required to load a map with smaller scales. To get started: 1) Click the "Activate" link to the left of this description. 2) Go to your Google Maps CP configuration page and configure the map's settings. 3) Go to the post-edition page to enter the geolocation information.

    ○ Users can register and log in via a front-end form

    ○ Users post new forum topics via a simple form

    ○ Each forum topic is displayed on its page where other users can reply

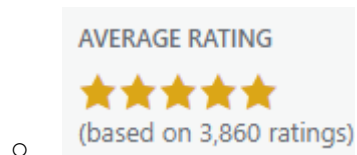16. Graphing - Elementor Charts and Graphs

- Rating:

AVERAGE RATING
★★★★⯨
(based on 12 ratings)
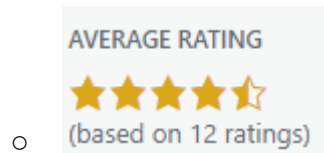
- Last Updated: 2 weeks ago

- Active Installations: 10,000+

- Purpose:

  - Your ultimate charts and graphs solution to enhance visual effects. Create versatile, advanced and interactive charts on your website

17. GTranslate

- Rating:

AVERAGE RATING
★★★★★
(based on 3,860 ratings)

- Last Updated: 1 week ago

- Active Installations: 600,000+

- Purpose:

  - Translate WordPress with GTranslate plugin uses Google Translate automatic translation service to translate WordPress site with Google power and make it multilingual. With 103 available languages, your site will be available to more than 99% of internet users. Our paid versions are fully SEO compatible which will increase your international traffic and sales. This translates plugin is a budget multilingual WordPress solution that combines automatic and human translations to save money and is easy to implement.

  - GTranslate has been a leading website translation services provider since 2008, it is moving away from the language barriers.

  - Compared to other translation plugins for WordPress, we use a cloud cloud-based approach which does not slow down your website. In addition to that, we can offer complete SEO features based on sub-domains with our paid options, which can make your website appear in search engines in different languages which will increase your international traffic and sales. In our paid versions we DO NOT limit the

number of words or the number of translated pageviews. You DO NOT pay additionally for automatic translations.

18. Image Optimizer by Elementor – Compress, Resize and Optimize Images

- Rating:
  - AVERAGE RATING
    ★★⯨☆☆
   (based on 32 ratings)
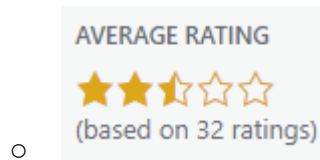
- Last Updated: 2 weeks ago

- Active Installations: 200,000+

- Purpose:
  - Image Optimizer is an easy-to-use WordPress plugin that reduces image size through various compression and resizing techniques – all of which preserve the highest possible image quality. Image Optimizer supports many popular formats, including JPEG, PNG, WebP, and GIF.

19. Insert PHP Code Snippet

- Rating:
  - AVERAGE RATING
    ★★★★★
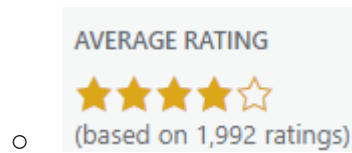   (based on 648 ratings)
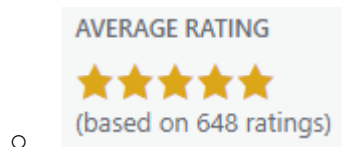
- Last Updated: 2 months ago

- Active Installations: 100,000+

- Purpose:
  - Convert PHP snippets to shortcodes
  - Insert PHP code easily using shortcode
  - Support for PHP snippet shortcodes in widgets
  - The dropdown menu in the TinyMCE editor to pick snippet shortcodes easily

20. Jetpack

- Rating:

  - **AVERAGE RATING**
    ★★★★☆
    (based on 1,992 ratings)

- Last Updated: 10-April-2024

- Active Installations: 4+ Million

- Purpose:

  - Jetpack is a WordPress plugin that helps you create better content, grow your subscribers, earn money from your website and keep it safe, fast, and secure. You can grow and keep track of your website traffic with Jetpack stats, and create better content with Jetpack AI. You can start a newsletter and grow your audience, turning fans into paying subscribers. Create beautiful content with Jetpack Creator and keep your site fast with Jetpack Boost.

21. Leaflet Map

- Rating:

  - **AVERAGE RATING**
    ★★★★★
    (based on 53 ratings)
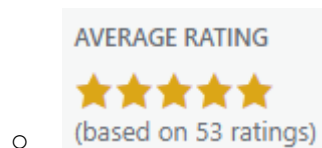
- Last Updated: 1 month ago

- Active Installations: 30,000+

- Purpose:

  - Add a map generated with LeafletJS: an open-source JavaScript library for mobile-friendly interactive maps. Map tiles are provided by default through OpenStreetMap, or MapQuest (with an app key). Can be set per map with shortcode attributes or through the dashboard settings.

22. Login Logout Register Menu

- Rating:

AVERAGE RATING

★★★★½ (based on 49 ratings)
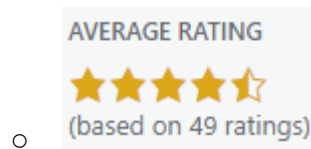
- Last Updated: 3 years ago

- Active Installations: 10,000+

- Purpose:

  - Login Logout Register Menu plugin allows you to add login, logout, register and profile links in the navigation menu.

  - The plugin provides you various settings in the admin area which you can use to customize it.

23. MapPress Google Maps and Leaflet Maps

- Rating:

AVERAGE RATING

★★★★½ (based on 143 ratings)
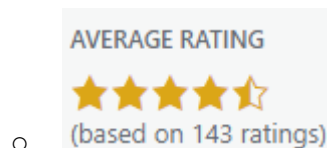
- Last Updated: 3 weeks ago

- Active Installations: 50,000+

- Purpose:

  - MapPress is the easiest way to add beautiful interactive Google and Leaflet maps to WordPress.

  - Create unlimited maps and markers using Gutenberg blocks or the classic editor. The pop-up map editor makes creating and editing maps easy!

24. Premium Addons for Elementor

- Rating:

AVERAGE RATING

★★★★★ (based on 1,548 ratings)
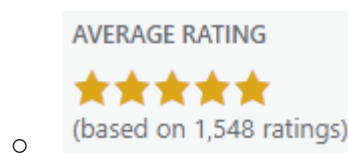
- Last Updated: 08-April-2024

- Active Installations: 700,000+

- Purpose:

  - Premium Addons for the Elementor plugin include widgets and addons like Blog Post Grid, Megamenu, Post Carousel, Advanced Slider, Modal Popup, Google Maps, SVG Draw, Lottie Animations, Countdown, Testimonials.

25. TablePress

- Rating:

  AVERAGE RATING

  ★★★★★
  (based on 4,528 ratings)
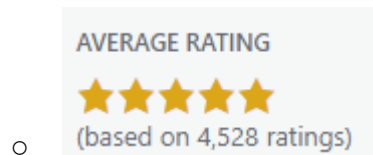
- Last Updated: 1 week ago

- Active Installations: 800,000+

- Purpose:

  - TablePress is the most popular and highest-rated WordPress table plugin.

  - Easily create, edit, and manage beautiful and modern data tables, no matter if small or large!

  - Add live sorting, pagination, searching, and more interactivity for your site's visitors!

  - Use any type of data, insert images, links, and even math formulas!

  - Import and export tables from/to Excel, CSV, HTML, and JSON files or URLs.

  - Embed tables into posts, pages, or other site areas using the block editor or Shortcodes.

 - All with no coding knowledge needed!

26. Ultimate Blocks

- Rating:

AVERAGE RATING

⭐⭐⭐⭐⭐

o (based on 633 ratings)
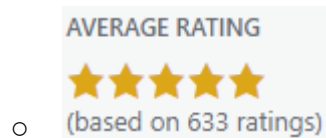
- Last Updated: 10-April-2024

- Active Installations: 50,000+

- Purpose:

  ○ Ultimate Blocks is a free powerhouse for bloggers and content marketers using WordPress. It's not just a plugin, it's a toolkit to skyrocket user engagement and simplify content creation.

  ○ With Ultimate Blocks, you're not just adding functionalities but crafting experiences.

  ○ From interactive content filters, and captivating call-to-actions, to social sharing made effortless, every block is a step towards a more engaging and visually appealing website.

  ○ It's about making every visit count, every interaction memorable, and every content piece a breeze to create and manage.

  ○ Transform your WordPress journey; let Ultimate Blocks be the catalyst for your website's success.

27. Unlimited Elements for Elementor

    - Rating:

      AVERAGE RATING

      ⭐⭐⭐⭐⭐

   o (based on 390 ratings)
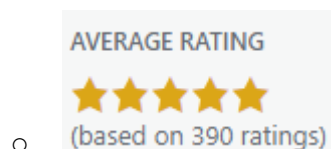
    - Last Updated: 1 week ago

    - Active Installations: 200,000+

    - Purpose:

      ○ Unlimited Elements - Huge Widgets Pack for Elementor Website Builder, with HTML/CSS/JS widget creator and editor

      ○ Elementor users, elevate your web design experience with Unlimited Elements for Elementor. An all-in-one plugin that instantly gives you the

most advanced widgets and tools to make better Elementor websites faster. Take your WordPress website to the next level.

28. WP Extended Search

- Rating:

  - AVERAGE RATING
    ★★★★★
    (based on 66 ratings)
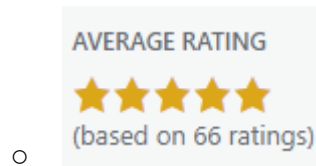
- Last Updated: 1 year ago

- Active Installations: 20,000+

- Purpose:

  - WP Extended Search is a lightweight and powerful search plugin.

  - With this plugin you can customize WordPress search to search in Post Meta, Author names, Categories, Tags, or Custom Taxonomies via admin settings. You can control the default behaviour of WordPress to search in the post title, post content, and post excerpt.

  - Apart from customizing default search behaviour, you can create multiple search settings, and then you can assign these settings to custom search forms.

  - For custom search forms, you have the option to choose from a widget, shortcode, PHP function, or HTML.

29. WP Go Maps (formerly WP Google Maps)

- Rating:

  - AVERAGE RATING
    ★★★★★
    (based on 2,834 ratings)
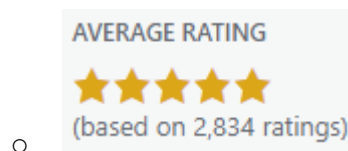
- Last Updated: 1 week ago

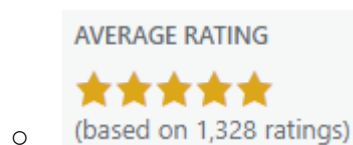- Active Installations: 400,000+

- Purpose:

- The easiest to use is Google Maps and Open Layers Map Plugin (including a Map Block)!

- Add a customized Google map, map block or Store Locator to your WordPress posts and/or pages quickly and easily with the supplied shortcode. No fuss. No iFrames and super easy to use! Perfect for contact page maps, routes, maps showing delivery areas and any other use you can think of!

- While the free version of WP Go Maps allows you to create a Google map with as many markers as you like, the Pro version allows you to do so much more!

- Create Elementor Maps, map blocks and map widgets easily with our WP Go Maps Elementor map block integration, straight out of the box!

30. WP Word-Cloud

- Purpose:
  - Draw word clouds based on text from several sources

31. WPCode Lite

- Rating:
  -
    AVERAGE RATING
    ★★★★★
    (based on 1,328 ratings)

- Last Updated: 1 week ago

- Active Installations: 2+ Million

- Purpose:
  - Insert Headers & Footers + Full WordPress Code Snippets Plugin

  - WPCode (formerly known as Insert Headers and Footers by WPBeginner) is the most popular code snippets plugin for WordPress used by over 2 million websites.

  - We make it easy for you to add code snippets in WordPress without having to edit your theme's functions.php file.

  - Our simple insert headers and footers interface allows you to insert code like Google Analytics, custom CSS, Facebook Pixel, and more to your

WordPress site's header and footer as well as other areas of your website. No need to edit your theme files!

- ○ Aside from Header and Footer scripts, you can also use WPCode to insert custom PHP code snippets, JavaScript code snippets, CSS code snippets, HTML code snippets, and text snippets with full conditional logic support.

32. wpDataTables - Tables & Table Charts

- ● Rating:

    - ○
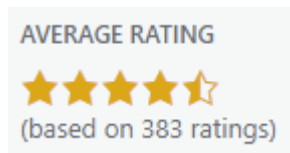
- ● Last Updated: 11-April-2024

- ● Active Installations: 70,000+

- ● Purpose:

    - ○ wpDataTables is a popular WordPress table plugin used to quickly create data tables & table charts from Excel, CSV, XML, JSON, PHP and other data sources. Use our WP table plugin to represent vast amounts of complicated data in a concise, user-friendly way using tables or charts.

    - ○ The main benefits wpDataTables provides to its users are saved time (as it automates displaying data on the website and allows to do so without investing time in coding) and no need to learn to code (creating a WordPress table like in wpDataTable would require development without it).

33. Yoast Duplicate Post

- ● Rating:

    - ○
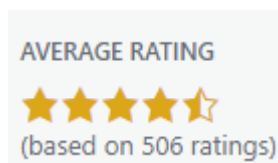
- ● Last Updated: 3 weeks ago

- ● Active Installations: 4+ Million

- Purpose:
  - This plugin allows users to clone posts of any type, or copy them to new drafts for further editing.

G. Custom Code

WordPress has a large pool of plugins, but to have granular customization, custom code is required. Custom code has been used to implement the interactive word cloud and to manage and edit the user profiles.

Explanation of Word Cloud Custom Code

As an interactive word cloud was proposed, an investigation was carried out to look for a plugin to implement an interactive word cloud. The investigation resulted in the conclusion that available plugins did not have the required functionality. Therefore a custom code was used to design and implement an interactive word cloud. The javascript library "D3.js" was used to implement the interactive word cloud. This javascript library is very popular among the javascript community and widely used to power charts and graphs.

Implementation details,

1. WordPress plugin "XYZ PHP Code" is used to run the code.
2. The plugin uses the shortcode "HarshScript"
3. The code can be accessed at the WordPress dashboard → XYZ PHP Code → "HarshScript"

Code breakdown

"D3.js" version 7.9.0 and d3.layout.cloud.js version 1.2.7 are used.

```
<script type="text/javascript" src = "https://cdnjs.cloudflare.com/ajax/libs/d3/7.9.0/d3.js"></script>
<script type="text/javascript" src = "https://cdnjs.cloudflare.com/ajax/libs/d3-cloud/1.2.7/d3.layout.cloud.js"></script>
```

The post tags are obtained to populate the word cloud. The tags that have one or more occurrences are filtered out and used for the word cloud.

The "div" block indicates the placement of the word cloud.

```
<?php  $tags = get_tags(array('hide_empty' =>true));?>
<div class="word-cloud" id="word-cloud-id"></div>
```

The tags are loaded from the PHP variables to the javascript variables. The variable is then initialized with the word cloud dictionary containing "word", "size of each word" and "slug". Slug is used to redirect the user when they click on a specific word on the cloud. This causes the cloud to be bounded inside the width and height of the "div" block that has a "ClassName" called "research-interest-word-cloud". The color is modified using color-fill by utilizing the "d3" default scheme called "schemeCategory10". The font is scaled linearly between the max size of the word and to min size of the word, which is then mapped to the range of font pixels ranging from [20, 96]. Margins are added to the could to improve readability.

```
<script>
      let dataset = <?php echo json_encode($tags); ?>;
      let cloud_words = []
      dataset.forEach((d,    i)=>cloud_words.push({"text":    d.name,    "size":    d.count,
"slug":d.slug}));
      let fontName = "Impact";
      let cWidth = document.querySelector('.research-interest-word-cloud').offsetWidth;
      let cHeight = document.querySelector('.research-interest-word-cloud').offsetHeight
      let fill = d3.scaleOrdinal(d3.schemeCategory10);
      let fontScale = d3.scaleLinear()
       .domain([
              d3.min(cloud_words, function(d) { return d.size; }),
              d3.max(cloud_words, function(d) { return d.size; })
       ])
       .range([20,96]);
      let margin = {top: 5, right: 5, bottom: 5, left: 5};
      let width =cWidth - margin.left - margin.right;
      let height = cHeight - margin.bottom - margin.top;
```

The cloud function provided is initialized under the layout class. After initialization, the width and height of the cloud are set, and then passed to the cloud word dictionary prepared, then the words are rotated between 0 degrees and 90 degrees randomly, which is followed by the font styles. The start method is then finally.

```
var layout  = d3.layout.cloud()
          .size([cWidth, cHeight])
          .words(cloud_words)
          .rotate(function() { return ~~(Math.random() * 2) * 90; })
```

```
            .font(fontName)
            .fontSize((d)=> fontScale(d.size))
            .on("end", draw)
 layout.start();
```

Here the function draws the word cloud with the functionality of mouse hover to zoom into and out of the text. The click event is also handled here where the users are redirected to a page specific to the research interest.

```
function draw (words) {
    const svg = d3.select(".word-cloud").append("svg")
            .attr("width", cWidth)
            .attr("height", cHeight)

    const g = svg.append("g")
        .attr("transform","translate(" + margin.left + "," + margin.top + ")");
     const wCloud =g.attr("transform", "translate(" + layout.size()[0] / 2 + "," +layout.size()[1] /
2 + ")")
                .selectAll("text")
                .data(words)
                .enter().append("text")
                .style("font-size", function(d) { return d.size + "px"; })
                .style("font-family", fontName)
                .style("fill", function(d, i) { return fill(i); })
                .attr("text-anchor", "middle")
             .on("mouseover", function(d, i) {


            d3.select(this).classed("word-hovered", true)
                    .transition()
                    .duration(500)
                    .style('font-size', function(d){return  d.size + 20 + 'px';})
                    .style('font-weight', 'bold')
                    .style('cursor', 'pointer')

            })
            .on("mouseout", function(d,i ) {
            d3.select(this).classed("word-hovered", false)
                    .transition()
                    .duration(500)
                    .style('font-size', function(d){return  d.size + 'px';})
```

```
                   .style('font-weight', 'normal')
        })
        .on('click', function(d, i) {
        var e = d3.select(this);
        window.location.href = `http://52.39.47.58/tag/${i.slug}`;
        })
        .transition()
           .duration(500)
        .attr("transform", function(d) {
               return "translate(" + [d.x, d.y] + ")rotate(" + d.rotate + ")";
           })
           .text(function(d) { return d.text; })
  }
```

Explanation of Edit Profile Custom Code

Advanced Custom Fields (a.k.a ACF) WordPress plugin is used to develop the edit profile feature. However, this does not accomplish all the requirements and does not support a custom form builder to edit profiles. The alternative for this was to utilize another plugin that gives this extension while working with ACF. Investigations led to the Formidable WordPress plugin, but unfortunately, this requires a premium account to connect it with ACF. Therefore custom code was utilized to perform this task.

Implementation details,

1. The code can be accessed at the WordPress dashboard → Snippets → "ACF Profile Form Save".

Code walk-through

The ACF form head is added initially. This ACF form head takes care of styling the form and adding the required files.

```
add_action('wp_head', 'add_acf_form_head');
function add_acf_form_head() {
     acf_form_head();
}
```

A shortcode is created to display the ACF form field. The method current user is used to obtain the current logged-in user. Next, all the posts created by this logged-in user are obtained. Then it is iterated through all these posts and filters one post that contains the user ID stored as a field value in the post. Once access to the post is obtained, an update on the post is performed by providing the post ID to the ACF_FORM method. If no posts are found, a new post is created by passing the value "new_post" to the ACF_FORM method. The ACF_FORM method takes some extra parameters such as "post title", "post_type" (here we have set the post type as the post), "post_status" (the post status can take values as "publish" or "draft"). To get the form field group, first create the group by going to ACF → Field Group → Add new group. Once this is created ID which is provided can be obtained in the URL of the page once the new group is added. This field group ID is passed under the parameter called "field_groups". Finally, the submit value takes the "display name of the button". Here the value of the button will be "Save" or "Update" depending on whether it was an existing or new post.

```php
add_shortcode( 'frontend_new_form', 'display_frontend_form' );
function display_frontend_form() {
      ob_start();
   function currentUser() {
       if ( ! function_exists( 'wp_get_current_user' ) ) {
            return 0;
       }
       $user = wp_get_current_user();
       return $user->ID;
   }
   $userId =  currentUser();
   $query_args = array(
       'post_type' => 'post',
       'orderby' => 'date',
       'order' => 'DSC'
   );
   $query = new WP_Query($query_args);
   $posts = get_posts();
   $postId= "new_post";
   foreach($posts as $post){
       if($post->user_id && $post->user_id == $userId){
            $postId = $post->ID;
       }
```

```php
    }
    if($postId == "new_post"){
        $submitValue = "Save";
    } else {
        $submitValue = "Update";
    }
    acf_form(array(
        'post_id'     => $postId,
        'post_title'  => true,
        'form' => true,
        'new_post'        => array(
        'post_type' => 'post',
        'post_status'   => 'publish'
        ),
        'field_groups' => array(2123),
        'submit_value'  => $submitValue
        ));
```

Now, to redirect the user to their respective profile page this function is utilized. Once ACF saves the post it calls the function name passed in the add_action.

This function creates a URL and then assigns this URL to the acf_form → return parameter.

```php
add_action('acf/save_post', 'my_acf_save_post');
function my_acf_save_post( $post_id ) {
     $post = get_post( $post_id );
   $year = get_the_date("Y", $post);
   $month = get_the_date("m", $post);
   $day = get_the_date("d", $post);
   $name =  get_field("name",$post_id);
   $urlName = str_replace(' ', '-', strtolower($name));
   $redirectURL = "http://52.39.47.58/$year/$month/$day/$urlName";
     $GLOBALS['acf_form']['return'] = $redirectURL;
}
```

Explanation of CEEA Research Papers Scrapping:

To populate the research publication for the SIG member the papers were scraped from the CEEA website. The output of the scraping script was a "CSV" file that could be imported into the "Table Press" WordPress Plugin.

Code Walk-Through

The necessary libraries are imported.

```python
import requests
from bs4 import BeautifulSoup
import re
import pandas as pd
import time
```

The following method obtains the response from the website using `requests.get`

```python
headers = {'user-agent':'Mozilla/5.0 (Windows NT 10.0; Win64; x64)
AppleWebKit/537.36 (KHTML, like Gecko) Chrome/91.0.4472.114
Safari/537.36'}
url = 'https://ojs.library.queensu.ca/index.php/PCEEA/issue/archive'

response = requests.get(url, headers=headers)
```

The paper structure object is generated

```python
proceedings_doc = BeautifulSoup(response.text,'html.parser')
```

All the required information from the website is obtained

```python
for proceeding in proceedings_doc.find("ul", {"class" :
"issues_archive"}).find_all("li"):
    proceeding_title_url = proceeding.find("a", {"class" : "title"})
    proceeding_url = proceeding_title_url.get("href")
    proceeding_title = proceeding_title_url.text
    response_proceeding = response = requests.get(proceeding_url,
headers=headers)
    proc_doc = BeautifulSoup(response_proceeding.text,'html.parser')
    proc_year = proc_doc.find("h1").text.replace("\t", "")[:5]
    print("----------")
    print(proceeding_url)
    print(proceeding_title)
```

```
        print(proc_year)
        for paper in proc_doc.find("ul", {"class" : "cmp_article_list
articles"}).find_all("li"):
        if paper.find("h3", {"class" : "title"}) is not None:
                paper_title = paper.find("h3", {"class" : "title"}).text
                paper_url = paper.find("h3", {"class" :
"title"}).find("a").get("href")
        if paper.find("a", {"class" : "obj_galley_link pdf"}) is not None:
                paper_pdf = paper.find("a", {"class" : "obj_galley_link
pdf"}).get("href")
        if paper.find("div", {"class" : "authors"}) is not None:
                paper_authors = paper.find("div", {"class" : "authors"}).text
                print(paper_title)
                print(paper_url)
                print(paper_authors)
                print(paper_pdf)
```

A dictionary is created using the information that was collected

```
paper_repos_dict = {
                'Paper Title' : [],
                'Authors' : [],
                'Year' : [],
                'Proceeding' : [] }

# Adding information to repository
def add_in_paper_repo(paper_title, authors, year, proceeding):
    paper_repos_dict['Paper Title'] = paper_title
    paper_repos_dict['Authors'] = authors
    paper_repos_dict['Year'] = year
    paper_repos_dict['Proceeding'] = proceeding

    return paper_repos_dict
```

The data is scraped and a CSV file is generated

```
data = []
for proceeding in proceedings_doc.find("ul", {"class" :
"issues_archive"}).find_all("li"):
    proceeding_title_url = ''
    proceeding_url = ''
```

```python
    proceeding_title = ''
    proc_year = ''

    proceeding_title_url = proceeding.find("a", {"class" : "title"})
    proceeding_url = proceeding_title_url.get("href")
    proceeding_title = proceeding_title_url.text.replace("\t",
"").replace("\n", "")
    proceeding_title = '<a target="_blank"
href="{}">{}</a>'.format(proceeding_url, proceeding_title)
    response_proceeding = response = requests.get(proceeding_url,
headers=headers)
    proc_doc = BeautifulSoup(response_proceeding.text,'html.parser')
    proc_year = proc_doc.find("h1").text.replace("\t", "").replace("\n",
"")[:4]
    for paper in proc_doc.find("ul", {"class" : "cmp_article_list
articles"}).find_all("li"):
    paper_title = ''
    paper_url = ''
    paper_authors = ''

    if paper.find("h3", {"class" : "title"}) is not None:
        paper_title = paper.find("h3", {"class" :
"title"}).text.replace("\t", "").replace("\n", "")
        paper_url = paper.find("h3", {"class" :
"title"}).find("a").get("href")
        paper_title = '<a target="_blank"
href="{}">{}</a>'.format(paper_url, paper_title)
    if paper.find("div", {"class" : "authors"}) is not None:
        paper_authors = paper.find("div", {"class" :
"authors"}).text.replace("\t", "").replace("\n", "")
    if paper_title != "":
        data.append(add_in_paper_repo(paper_title, paper_authors,
proc_year, proceeding_title).copy())

df = pd.DataFrame(data)
df.to_csv("./data_CEEA_V2.csv", sep='\t', encoding='utf-8')
```

References

1. Saini, N. (2021). Scraping Information of Research Papers on Google Scholar using Python. Medium. Web Article.
   https://medium.com/@nandinisaini021/scraping-publications-of-aerial-image-research-papers-on-google-scholar-using-python-a0dee9744728