# **ProConnect: An AI-Powered System For Cross-Platform Professional Profile Optimization**

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Abstract- ProConnect is an intelligent, user-centric guidance system designed to help individuals create, refine, and maintain their professional online profiles across platforms like LinkedIn, GitHub, Google Sites, and Instagram. It offers advanced features such as personalized templates, real-time suggestions, and platform-specific best practices to enable users to build an optimized and cohesive personal brand. With a one-time input mechanism, ProConnect automates profile updates and synchronization across platforms, reducing manual effort and ensuring consistency. By streamlining the process of building a strong digital presence, ProConnect supports users in achieving goals such as job hunting, freelancing, portfolio presentation, and personal branding, making it a comprehensive solution for career development in the digital age.

*Keywords*- ProConnect, professional profiles, synchronization, personalization, career development

## I. INTRODUCTION

In today's rapidly evolving era of digital transformation, having a professional online identity is no longer just a valuable asset—it is a fundamental requirement. In nearly every industry, employers, clients, collaborators, and professional peers evaluate an individual's digital presence before making decisions about hiring, partnerships, or other forms of engagement. A well-maintained digital footprint helps establish credibility, demonstrates expertise, and allows individuals to communicate their personal brand and professional narrative effectively. However, this presence is not confined to a single platform. Instead, it must span across multiple, diverse platforms, each catering to different aspects of a person's professional and creative life. For example, LinkedIn serves as a primary hub for professional networking, job searches, endorsements, and showcasing qualifications. GitHub is essential for developers and engineers to share code, collaborate on projects, and demonstrate their technical capabilities. Google Sites provides a flexible canvas for creating personalized websites or portfolios that can display a wide range of content such as academic achievements, design projects, or writing samples. Meanwhile, Instagram is increasingly being used for visual storytelling, creative outreach, and personal brand development, especially in fields such as design, marketing, and entrepreneurship.

Maintaining a consistent, tailored, and high-quality presence across all of these platforms is a challenging and time-consuming task. Each platform has its own expectations regarding content formatting, tone, and audience engagement. Users often struggle with fragmented information, inconsistent branding, and a lack of understanding of platform-specific best practices. Many also find it difficult to update multiple profiles regularly, leading to outdated or incomplete representations of their skills and experiences. These challenges are further intensified for individuals without a background in design, writing, or digital marketing, making the process of crafting a cohesive online presence feel inaccessible or overwhelming. This is where **ProConnect** steps in as an innovative and comprehensive solution.

**ProConnect** is a centralized, intelligent guidance system that empowers users to effortlessly build, enhance, and manage their professional identities across multiple digital platforms. Through a simple one-time input mechanism, users can enter their key information-such as education, experience, skills, projects, and branding elements-which the system then uses to generate, update, and synchronize personalized profiles on all connected platforms. ProConnect combines expert-curated templates, platform-specific formatting rules, and AI-driven suggestions to ensure that each profile is not only visually appealing but also strategically optimized for its intended audience. The system also provides real-time guidance and recommendations, helping users refine their content and maintain relevance over time. Whether someone is an aspiring professional, a freelancer, a creative artist, or an entrepreneur, ProConnect eliminates the guesswork and manual labor traditionally involved in online profile management. By streamlining the entire process, the platform allows users to focus on their career development while ensuring their digital presence remains consistent, professional, and impactful.

Furthermore, ProConnect supports ongoing updates, so users can seamlessly reflect promotions, new projects, or skill advancements across platforms with minimal effort. Its intuitive interface and automation features make it accessible even to non-technical users, broadening its appeal to students, job seekers, and seasoned professionals alike. Integration with industry trends ensures that profile recommendations remain current, aligning users with what employers and audiences are looking for. ProConnect also encourages users to develop a storytelling approach to their profiles, turning static resumes into dynamic personal narratives. As digital reputations become increasingly influential, having a unified system like ProConnect gives users a critical edge in standing out. Ultimately, ProConnect is not just a tool—it is a career companion designed to grow with you in the digital world.

#### **II. PROBLEM DEFINITION**

Thus, **ProConnect** was envisioned as a **one-stop interactive system** that reduces the technical and strategic barriers associated with professional branding. It democratizes access to profile optimization and empowers users to present themselves effectively online.

In today's highly competitive academic and professional environment, individuals are constantly striving to present themselves in the most refined and impactful way possible. A well-crafted resume, portfolio, LinkedIn profile, or GitHub repository not only reflects a person's technical abilities but also communicates their personality, achievements, and overall value to potential employers or collaborators. However, many students and early-career professionals struggle with articulating their skills, experiences, and aspirations in a manner that resonates with recruiters or evaluators.

This gap becomes especially noticeable during placements, internships, and higher studies applications where **first impressions are often formed through digital profiles and documents**. Despite having strong technical backgrounds or notable projects, many candidates fail to highlight their capabilities effectively due to poor structuring, inconsistent formatting, or weak language in their resumes or profiles. The result is a **missed opportunity**, not due to a lack of skill but due to an **inability to communicate that skill** appropriately.

Moreover, not everyone has access to personalized career guidance or mentors who can help improve their professional presentation. This creates a significant **information and mentorship gap**, particularly in educational institutions where students come from diverse socio-economic backgrounds. Additionally, manually writing and editing content for multiple platforms—such as GitHub, LinkedIn, and resumes—is time-consuming, mentally exhausting, and often inconsistent in tone and clarity.

The rise of Artificial Intelligence and Natural Language Processing offers a compelling solution to these issues. By leveraging generative models, it becomes possible to create tools that can understand raw user input and generate professional, structured, and grammatically correct content tailored to various platforms. This project is driven by the vision of using such technology to democratize professional growth, enabling students and individuals from all backgrounds to build their brand and document their work effectively.

Our motivation is not only to automate the content generation process but to offer a **personalized assistant-like experience** that guides users through their professional journey. The aim is to make **resume-building**, **portfolio creation**, **and digital branding** more **accessible**, **accurate**, **and efficient** through an AI-based platform that bridges the gap between potential and presentation.

In essence, this project is motivated by a desire to **empower individuals** to present their best selves intelligently, confidently, and professionally—with minimal effort and maximum effectiveness.

ProConnect aims to be a trusted companion in users' professional growth, helping them easily navigate digital branding. By leveraging AI and user-friendly design, it ensures that users can present their best selves across platforms, boosting their professional presence with minimal effort.

#### **III. LITERATURE SURVEY**

To understand the current landscape of digital professional profiles, portfolio building, and personal branding, a comprehensive literature survey was conducted, examining various platforms, tools, and research studies. The survey included both academic papers and practical tools like LinkedIn, GitHub, Google Sites, and Canva, aiming to identify existing gaps in these solutions and how ProConnect could address these challenges. LinkedIn is widely regarded as the leading professional networking platform, with over 900 million users globally. It allows individuals to create a digital resume, network with professionals, and apply for jobs directly. However, LinkedIn has several limitations, such as a lack of creative control over design, which leaves users with minimal options for personalization. The platform's interface is often overwhelming for new users due to feature overload, and it does not offer intelligent suggestions for improving

content quality or ensuring design consistency. ProConnect seeks to address these issues by offering content enhancement and personalized suggestions, which LinkedIn does not provide natively. By streamlining the resume-building process and improving user experience, ProConnect enhances LinkedIn profiles with more tailored and visually appealing results.

GitHub, on the other hand, is a platform primarily used by developers for hosting code, managing version control, and showcasing their technical skills. While many developers use GitHub as a portfolio to demonstrate their coding expertise, it is intimidating for non-technical users and has limited utility for those looking to showcase skills outside the realm of coding, such as design or marketing. Furthermore, GitHub does not help users craft a coherent professional story or profile narrative, which is essential for creating a comprehensive online identity. ProConnect addresses these gaps by making portfolio creation more accessible to a broader audience, allowing users to showcase a variety of skills, including design, textual content, and multimedia achievements. This feature makes ProConnect an ideal solution for users from various fields, not just developers, ensuring a more holistic approach to personal branding and portfolio building.

Google Sites, a simple and free website builder, is commonly used by students and individuals for creating personal portfolios or websites. While it provides an easy-touse interface, it has several limitations. Users are constrained by limited templates and customization options, and it lacks tools for content generation or enhancement. Users must manually write and design everything themselves, which can be time-consuming and challenging, especially for those without design experience. ProConnect enhances the Google Sites experience by integrating smart content generators and offering profile layout suggestions based on industry-specific standards, making the process more efficient and userfriendly. This eliminates the need for users to start from scratch and provides them with the necessary tools to create a polished, professional portfolio.

Canva, known for its design templates, is another tool frequently used by individuals to create visually appealing resumes, presentations, and other digital content. However, while Canva excels in design, it lacks backend data management and does not provide guidance on what content to write. Additionally, exported resumes are static (usually in PDF format), and there is no integration with live profiles or online portfolios. ProConnect combines Canva-like design capabilities with intelligent content suggestions and real-time portfolio generation, providing a more dynamic and interactive experience. Users can build not only aesthetically pleasing resumes but also living, evolving online portfolios that reflect their professional journey.

Finally, research on digital identity management, such as the paper "Digital Identity Management" by Dr. Aruna V., highlights the importance of maintaining a coherent and consistent digital identity across multiple platforms. The study emphasizes that inconsistencies across platforms can diminish professional credibility, and manual updates often lead to outdated or fragmented profiles. ProConnect directly addresses these challenges by acting as a central hub that updates and generates content for multiple platforms simultaneously, ensuring that users maintain a unified and professional digital presence across all their online profiles.

Other platforms like Zety, Novoresume, and Resume.io focus primarily on resume-building, offering templates and writing assistance. However, these tools have limitations, such as restricting access to certain features behind paywalls and focusing exclusively on resume creation rather than a broader digital presence. ProConnect goes beyond static resume creation by supporting the building of a complete digital identity that spans across multiple platforms, offering a more personalized and comprehensive solution for career development and personal branding. By addressing the limitations found in these existing tools, ProConnect presents an all-in-one platform that simplifies profile management while ensuring consistency and professionalism across the digital space.

#### **IV. PROPOSED SYSTEM**

The methodology for designing, developing, and evaluating ProConnect follows a systematic approach to ensure the platform effectively automates professional profile generation and enhancement. The process is broken down into multiple stages to ensure that the platform is not only functional but also user-friendly and impactful in its ability to help users optimize their digital presence.

The first stage involves **Problem Understanding & Requirement Analysis**, where the goal is to identify the specific challenges that users face when creating digital professional profiles and portfolios. This phase involved conducting surveys among students, freshers, and early professionals to understand their pain points. The analysis focused on commonly used platforms like LinkedIn, GitHub, Canva, and other resume-building tools. Key findings highlighted that users spend excessive time rewriting the same information across multiple platforms, struggle with the lack of professional design, and are often hindered by unclear structures with no personalized content suggestions. From these insights, clear goals were defined for ProConnect: to automate the profile-building process, enhance content quality, and unify the user's professional presence across various platforms.

The next stage is **System Design**, where architecture planning was carefully crafted. A modular approach was chosen to separate the system into distinct layers for better clarity and functionality. These modules include the **User Input Module**, which gathers basic data from users like their name, skills, and projects; the **Content Generator Module**, which utilizes AI or language models to reframe and enhance the provided data; the **Template Selector Module**, which suggests templates for resumes, profile designs, and portfolios; and the **Multi-Platform Output Module**, which generates customized versions of the profile for LinkedIn, GitHub, Google Sites, and other platforms. This modular design ensures that the system is both flexible and scalable.

In the **Technology Stack** phase, the platform's underlying technologies were carefully selected. For the frontend, **Streamlit** was chosen for its interactive user interface, with additional styling implemented using **HTML/CSS**. On the back-end, **Python** was selected due to its versatility and ease of integration with AI models. The database was set up using either **MySQL** or **CSV files** to securely store user data. To power the content generation capabilities, **GPT-based text generation APIs** were integrated, enabling automatic professional language rewriting. Lastly, tools like **Canva** and **Google Sites** were incorporated to provide design and publishing functionalities, ensuring that the profiles generated were visually appealing and easy to manage.

#### Architecture Diagram



## V. IMPLEMENTATION DETAILS

ProConnect is a resume analysis web application developed using Streamlit for the frontend and MySQL for backend data storage, with advanced Natural Language Processing (NLP) capabilities powered by Stanza, YAKE, and SentenceTransformers. The application begins by setting up the interface using Streamlit'sset\_page\_config for a wide layout. NLP models are loaded using a cached function to ensure they are initialized only once, which includes downloading the English pipeline of Stanza and loading a sentence transformer model (all-MiniLM-L6-v2) for sentence embeddings.

The core functionality involves analyzing the usersubmitted resume text. First, YAKE extracts the top 15 keywords, providing a quick thematic summary. Next, Stanza processes the text to identify named entities (e.g., names, organizations) and noun phrases (common and proper nouns) for deeper context. Each sentence from the resume is embedded using SentenceTransformers and compared using cosine similarity to predefined embeddings of different platforms like LinkedIn, GitHub, Instagram, and Google Sites. This allows the system to classify which platform each sentence is best suited for, making resume tailoring easier.

On the backend, MySQL is used to store analysis results. A resume\_analysis table is created (if not already present) with fields for the original resume text, extracted keywords, named entities, and nouns. Every resume processed is saved to this database to maintain a history of analysis. The Streamlit UI includes an input text area for pasting resumes, and upon clicking the "Analyze" button, users are presented with a clean, styled interface displaying extracted keywords, entities, and noun phrases inside custom-designed result boxes using CSS. Additionally, sentence-to-platform classifications are shown inside an expandable section for user reference.

ProConnect thus combines NLP, database management, and user-friendly UI to help individuals optimize resumes by aligning content with the expectations of different professional platforms.

# VI. RESULT AND DISCUSSION



### VII. CONCLUSION

ProConnect aims to simplify and enhance the process of building and optimizing professional profiles across major platforms. By providing personalized guidance, best practices, and templates, the project ensures that users can create standout profiles that effectively represent their personal brand. This solution is ideal for job seekers, freelancers, and professionals looking to boost their online presence in a competitive job market. Through the integration of platformspecific guidance, users will be empowered to manage and optimize their profiles across platforms effortlessly, saving time and ensuring consistency in their professional representation.

#### REFERENCES

- [1] Campos, R., Mangaravite, V., Pasquali, A., Jorge, A., Nunes, C., & Jatowt, A. (2020).
   YAKE! Keyword extraction from single documents using multiple local features.*Information Sciences*, 509, 257– 289. https://doi.org/10.1016/j.ins.2019.09.013
- [2] Reimers, N., & Gurevych, I. (2019). Sentence-BERT: Sentence embeddings using Siamese BERT-networks.arXiv preprint arXiv:1908.10084. <u>https://arxiv.org/abs/1908.10084</u>
- [3] Explosion AI. (2023).
   spaCy: Industrial-strength natural language processing in Python. Retrieved from <u>https://spacy.io</u>
- [4] Hugging
   Face.
   (n.d.).

   SentenceTransformers
   library.
   Retrieved
   from

   <u>https://www.sbert.net/</u>
- [5] Devlin, J., Chang, M.-W., Lee, K., & Toutanova, K. (2018).
   BERT: Pre-training of deep bidirectional transformers for language understanding.*arXiv preprint* arXiv:1810.04805.

https://arxiv.org/abs/1810.04805

- [6] Rose, S., Engel, D., Cramer, N., & Cowley, W. (2010). Automatic keyword extraction from individual documents. In *Text Mining: Applications and Theory* (pp. 1–20). https://doi.org/10.1002/9780470689646.ch1
- [7] Barrios, F., López, F., Argerich, L., & Wachenchauzer, R. (2016).
  Variations of the similarity function of TextRank for automated keyword extraction. *Proceedings of the 2nd Brazilian Conference on Intelligent Systems (BRACIS)*,
  - 59–66. https://doi.org/10.1109/BRACIS.2016.021
- [8] Papagiannopoulou, E., & Tsoumakas, G. (2020). A review of keyphrase extraction. Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery, 10(2), e1339. https://doi.org/10.1002/widm.1339

- [9] Lan, Z., Chen, M., Goodman, S., Gimpel, K., Sharma, P., & Soricut, R. (2020).
   ALBERT: A lite BERT for self-supervised learning of language representations. *International Conference on Learning Representations (ICLR)*. https://arxiv.org/abs/1909.11942
- [10] Conneau, A., Khandelwal, K., Goyal, N., Chaudhary, V., Wenzek, G., Guzmán, F., ... & Stoyanov, V. (2020). Unsupervised cross-lingual representation learning at scale.arXiv preprint arXiv:1911.02116. <u>https://arxiv.org/abs/1911.02116</u>
- [11] Liu, F., Yang, Y., & Gholipour, A. (2021). Fast keyword extraction using contextual word embeddings. *Expert Systems with Applications*, 168, 114361. https://doi.org/10.1016/j.eswa.2020.114361
- [12] Luan, Y., Ostendorf, M., & Hajishirzi, H. (2018). Multi-task identification of entities, relations, and coreference for scientific knowledge graph construction. Proceedings of the 2018 Conference on Empirical Methods in Natural Language Processing (EMNLP), 3219–3232. https://aclanthology.org/D18-1351/
- [13] Gao, T., Yao, X., & Chen, D. (2021). SimCSE: Simple contrastive learning of sentence embeddings.arXiv preprint arXiv:2104.08821. <u>https://arxiv.org/abs/2104.08821</u>
- [14] Caselles-Dupré, H., Lesaint, F., & Royo-Letelier, J. (2018).

Word2Vec to Doc2Vec: Contextualized document representations for sentiment analysis.*Proceedings of the First Workshop on Computational Modeling of People's Opinions, Personality, and Emotions in Social Media*, 38– 44. https://aclanthology.org/W18-1106/

[15] Zhang, Y., Jin, R., & Zhou, Z.-H. (2010). Understanding bag-of-words model: A statistical framework.*International Journal of Machine Learning* and Cybernetics, 1(1–4), 43–52. https://doi.org/10.1007/s13042-010-0001-0