

# Searching Occupations for Architects with Artificial Intelligence Content Generators

Ekrem Bahadır Çalışkan

*Architecture/Faculty of Architecture and Fine Arts, Ankara Yıldırım Beyazıt University, Turkey*

*(ebcaliskan@aybu.edu.tr)*

**Abstract** – Architecture is often seen as a blend of science and art, combining the technical aspects of constructing buildings with creative design elements. Architects use creativity to shape the built environment; this intersection of art and architecture excites the field. After taking a bachelor's degree, architects join business life with diverse possibilities. As with any field, architecture is constantly evolving, and it can be expected to see some major changes in the coming years with the advancement of technology. Exploring the jobs and works for defining occupation types of architects is important to present opportunities and improve skills for them. Surveys, research on business life, and public reports are significant in identifying any work tendency and change for disciplines. Language models and artificial intelligence (AI) content assistants are released. It observed a beneficial capability to build the content and research within the context and integrity. Many studies were started to explore the limits and possibilities of AI tools. In this research, a search query for exploring job opportunities of an architect in a structured merging framework. The results are listed, refined, and rated. The evaluation is held to underline the occupation types. The findings show the position of AI tools in the work field of architecture

*Keywords – Occupation, Architect, Artificial Intelligence, Content Generators, Job Opportunities*

## I. INTRODUCTION

How we look for jobs and vocations has changed drastically, especially in the architecture sector. Job seekers can now quickly identify and explore a variety of vocations related to architecture thanks to the development of content generators driven by AI. These cutting-edge programs analyze enormous quantities of data using machine learning algorithms and recommend jobs based on a person's abilities, experience, and interests. As a result, the job search procedure is expedited, more effective, and better suited to the user's requirements. AI content generators provide an innovative and fascinating new way to navigate the complex landscape of architecture-related jobs in this era of technological growth. As examples, Chat GPT, you.com and copy.ai could be given. Big language model Chat GPT (Chat Generative Pre-trained Transformer), created by OpenAI, is a form of AI that may be used

as a chatbot [1]–[3]. Tuples of input and output data representing a sizable amount of training data must be provided [4]. Chat GPT was developed to converse conversationally, employing deep language algorithms and training sets [5], [6]. This lets the researcher a new knowledge source to investigate and compare diverse areas. Contemporary approaches are also implemented to search the occupation types for architecture in this research. All used content generators are presented in the material section.

## II. ARCHITECT AND ROLES

Architects have been one of the oldest roles in civilization from the beginning of history. The architect or artist in Ancient Rome was in charge of supervising the complete construction of the great symbols of the culture, including the Coliseum, cathedrals, fountains, aqueducts, highways, and the Forum [7]. Then the roles and responsibilities were

changed and improved in parallel to the development of technology and civilizations. Due to Oxford Dictionary architect is a person whose job is designing buildings, who is responsible for planning and creating an idea, and who designs or puts together a program [8]. An architect also prepares the drawings of a building and makes it be constructed [9].

Money, marketing, staying small and managing growth, and managing office and information technologies are important aspects of running an architect's practice [10]. They have influences on many areas. Architects and their works have not only effects on particular residents but also local communities [11]. Thus, the education of architect undergraduate is so vital. Unfortunately, it does not suit every community or country's conditions [7]. Thus, for many countries, establishing vocational practices such as instructions or chambers defines rules and criteria for business of architecture.

In the new age of technology and knowledge the roles and responsibilities of architects have been upgraded and transformed in the way of executing the works. For example, Building Information Modelling (BIM) allows designers to govern and examine all works in processes from design to construction. BIM brings power to information sharing, organization roles, work processes coordination, an environment for teamwork and simulation opportunity before construction [12]. Education, collaboration and communication, knowledge and experience and skills are important subjects for impacting the architect in the contemporary world [13].

### III. MATERIALS AND METHOD

The job opportunities and occupation types are explored by implementing content generators as AI tools. Figure 1 shows the research flow for searching the possible occupations. The same question was asked to all content generators on 01.04.2023 which is "What are the job opportunities for architects?". The words have not been changed and the conversation has not been executed. The captured findings are listed and arranged due to sources. Then they refined and merged by eliminating the expression differences. For example, design architect, architectural designer or project architect expression are merged under the "designer and project architect" group. The number

of expressions is counted and rated for evaluation and discussion.

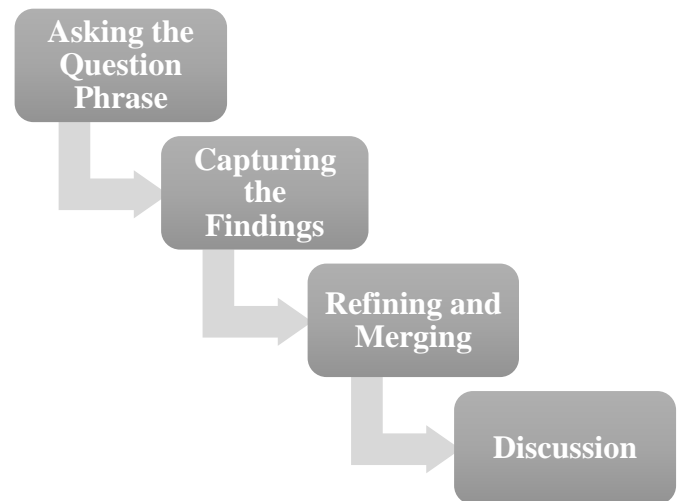


Figure 1. Research Flow

Used search engines and content generators are Chat GPT [2], Copy.ai [14], Hypotenuse.ai [15], Google [16], Tinywow [17], Unschooler [18] and You [19].

### IV. FINDINGS

Results should be clear and concise. The results' most important features and trends should be described but not interpreted in detail. Table 1 and 2 show the findings without any word changes from the content generator listed.

Table 1. Findings of Searching 1

Chat GPT	You.com
Architectural design	Architect
Project management	Graphic designer
Sustainability consulting	Project coordinator
Real estate development	Interior designer
Teaching and research	Lighting architect
Interior design	Urban planner
Restoration and preservation	Landscape architect
Healthcare design	Restoration architect
Landscape architecture	Town Planner
Computational design	Architectural technologist
Building information modeling	Building surveyor
Virtual reality design	Production Designer

	Historic buildings inspector
<b>unscholer</b>	Construction manager
Design Architect	Green building consultant
Project Architect	Workplace strategist
Interior Architect	3D modelling specialist
Landscape Architect	BIM manager
Urban Planner	Architectural renderer
Teaching architecture	Design manager
Government positions	Code consultant
	Accessibility consultant
<b>Tinywow</b>	Sustainability consultant
healthcare	Real estate developer
education	Project architect
residential design	Technical architect
project manager	Healthcare architect
sustainability	Education facilities planner

Table 2. Findings of Searching 2

<b>Copy.ai</b>	<b>Hypotenuse.ai</b>
Architectural designer	Design Architect
Architectural engineer	Project Architect
Architectural photographer	Urban Planner
Architectural technologist	Interior Architect
Building control surveyor	Landscape Architect
Building inspector	Sustainable Design Architect
Building services engineer	Architectural Technologist
Commercial/residential surveyor	BIM (Building Information Modelling)
Conservation officer	Teaching and Research
Landscape architect	Self-Employment
Naval architect	
Planning and development surveyor	<b>Google.com</b>
Production designer	Urban Planning
Property developer	Interior Design
Quantity surveyor	Landscape Design
Set designer	Commercial Architecture
Structural engineer	Green Building Design
Town planner	Architect

Urban designer	Architectural technologist
Urban planner	Interior and spatial designer
	Building surveyor
	Town planner
	Production designer
	Historic buildings inspector
	Structural engineer

All the found occupations and jobs were checked and refined, the repetitions were deleted and the final list is presented in Table 3.

Table 2. Merged Findings

<b>Jobs and Works</b>
Virtual reality design, Graphic designer
Designer and project architect
Lighting architect, Urban planner
Architectural photographer, Naval architect
Sustainability consultant and design
Set designer, Building surveyor
Accessibility consultant, Real estate
Code and spec. consultant, Project management
Government positions, Product designer
3d modeling and render
Inspector and service engineer
BIM expert and consultancy
Landscape architecture, Teaching and research
Restoration and preservation, Interior design
Computation and technology

The rated jobs and works of the architect are shown in figure 3. The rates were counted from the responses of content generators. The order was made; any qualitative conversions or comments were not implemented.

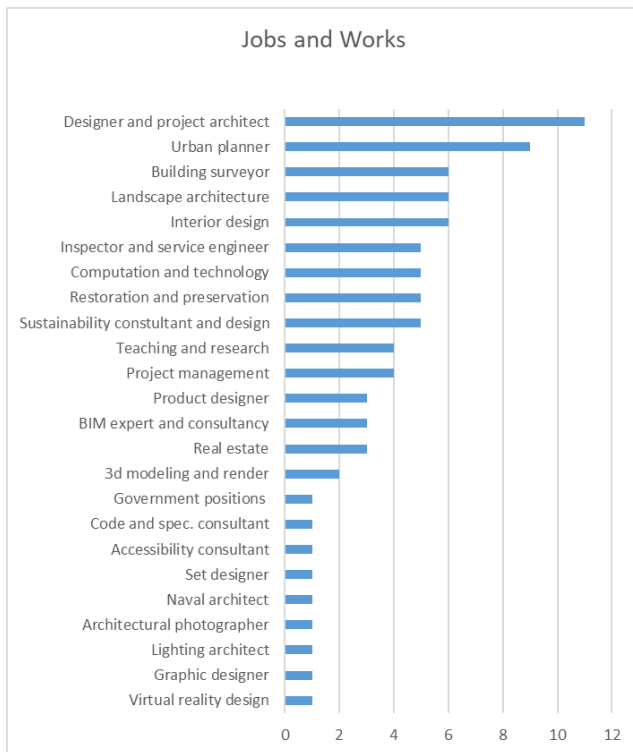


Figure 2. Rated Jobs and Works

## V. DISCUSSION

The findings from different content generators have variance in number, expressing the same issue and underlying some different jobs. For example, you.com stated 28 jobs, whereas chat GPT is 12. Unshcoler and Tinywow' responses include few occupations and they are so general. In many of them, there are some responses related to building or design typology which could be thought of as sub-parts of the designer architect or architectural designer.

Same works were stated in different forms. Sustainability consulting, sustainability and sustainable design architecture are in the same definition that reflects sustainability-related works. Another example could be given the occupations for real estate such as: real estate developer and property developer. All these need to be refined and arranged under the main headings.

Some specific jobs were offered like accessibility consultant, code consultant and lighting architect. These shows that the diversity of building services is increasing according to countries or institutions. The jobs related to 3d modeling or rendering and BIM were also stated, since they are becoming

increasingly important in business. Virtual reality design is a significant finding as a work opportunity in the field of structuring virtual worlds.

Figure 2 presents the whole list of jobs conducted as a result of this research with a rating. The ratings and evaluations need further and deeper research based on the literature survey, vocational practice and scientific reports about the market; however, it shows general outline of occupations types for the architect based on the content generators.

## VI. CONCLUSION

The research underlines the contemporary occupation types, job and works possibilities for architects. The knowledge source of content generators is the data and information that can be reachable online. Any basic search on internet may have some findings, however the user person should seek the inquiries for an integrated outcome. On the other hand, with the developments in AI, the released tools offer the generation of content based on training, learning and structure. This study does not stand at a point to evaluate and discuss the working principle of AI content generators; it presents a searching and merging experiment for a specific subject with the same query. Consequently, the possible occupations of architects after the undergraduate education are presented that could be expanded and detailed.

## ACKNOWLEDGMENT

The survey was executed on 01.04.2023.

## REFERENCES

- [1] S. S. Biswas, 'Potential Use of Chat GPT in Global Warming.', *Annals of biomedical engineering*, 2023.
- [2] 'ChatGPT', 2023. [Online]. Available: <https://openai.com/blog/chatgpt>. [Accessed: 16-Mar-2023].
- [3] R. W. Mcgee, 'Is Chat GPT Biased against Conservatives ? An Empirical Study', 2023.
- [4] J. Landgrebe and B. Smith, 'Making AI meaningful again', *Synthese*, vol. 198, no. 3, pp. 2061–2081, 2021.
- [5] C. Caucheteux, A. Gramfort, and J. R. King, 'Deep language algorithms predict semantic comprehension from brain activity', *Scientific Reports*, vol. 12, no. 1, pp. 1–10, 2022.
- [6] 'OpenAI', 2023. [Online]. Available: <https://openai.com/>. [Accessed: 13-Mar-2023].
- [7] D. Chappell and M. Dunn, *The Architect in Practice*, Eleventh., vol. 11, no. 4. wil, 2016.
- [8] 'Oxford Dictionary', 2023. [Online]. Available: <https://www.oxfordlearnersdictionaries.com/definitio>

- n/english/architect\_1?q=architect. [Accessed: 02-Apr-2023].
- [9] 'TDK', 2023. [Online]. Available: <https://sozluk.gov.tr/>. [Accessed: 02-Apr-2023].
- [10] D. Littlefield, *Architect's Guide to Running Practice*. Architectural Press, 2004.
- [11] J. Wiszniowski, 'Responsibility of the architect to the local community', *Architectus*, vol. 2, no. 30, pp. 63–67, 2011.
- [12] R. Sebastian, 'Changing roles of the clients, architects and contractors through BIM', *Engineering, Construction and Architectural Management*, vol. 18, no. 2, pp. 176–187, Mar. 2011.
- [13] K. L. Burr and C. B. Jones, 'The role of the architect: Changes of the past, practices of the present, and indications of the future', *International Journal of Construction Education and Research*, vol. 6, no. 2, pp. 122–138, 2010.
- [14] 'Copy.ai', 2023. [Online]. Available: <https://www.copy.ai/>. [Accessed: 02-Apr-2023].
- [15] 'Hypotenuse AI', 2023. [Online]. Available: <https://www.hypotenuse.ai/>. [Accessed: 29-Mar-2023].
- [16] 'Google', 2023. [Online]. Available: [https://www.google.com/search?q=What+are+the+job+opportunities+for+architects%3F&sxsrf=APwXEd eLlxQW3eNcBBNyNs3am\\_tJaeg7Iw%3A1680380428809&source=hp&ei=DJIoZMm5L8OnseMPibyqAo&iflsig=AOEireoAAAAAZCigHJeF-1le9kvcESi-AO1jvYT3Lc8u&ved=0ahUKEwjJ7630wIn-AhXDU2wGHQneBqUQ4dUDCAg&uact=5&og=W hat+are+the+job+opportunities+for+architects%3F&gs\\_lcp=Cgdnd3Mtd2l6EAMyBggAEBYQHjIGCAA QFhAeMgYIABAWEB46BwgjEOoCECdQAFjNX WCdZGgCcAB4AoABqwGIAasBkgEDMC4xmAE AoAECOAEBsAEK&sclient=gws-wiz.](https://www.google.com/search?q=What+are+the+job+opportunities+for+architects%3F&sxsrf=APwXEd eLlxQW3eNcBBNyNs3am_tJaeg7Iw%3A1680380428809&source=hp&ei=DJIoZMm5L8OnseMPibyqAo&iflsig=AOEireoAAAAAZCigHJeF-1le9kvcESi-AO1jvYT3Lc8u&ved=0ahUKEwjJ7630wIn-AhXDU2wGHQneBqUQ4dUDCAg&uact=5&og=W hat+are+the+job+opportunities+for+architects%3F&gs_lcp=Cgdnd3Mtd2l6EAMyBggAEBYQHjIGCAA QFhAeMgYIABAWEB46BwgjEOoCECdQAFjNX WCdZGgCcAB4AoABqwGIAasBkgEDMC4xmAE AoAECOAEBsAEK&sclient=gws-wiz.) [Accessed: 01-Apr-2023].
- [17] 'TinyWow', 2023. [Online]. Available: <https://tinywow.com/>. [Accessed: 31-Mar-2023].
- [18] 'Unschooler', 2023. [Online]. Available: <https://unschooler.me/profile/bahadir-caliskan-7377>. [Accessed: 01-Apr-2023].
- [19] 'You', 2023. [Online]. Available: <https://you.com/>. [Accessed: 30-Mar-2023].