**THE POWER OF AI IN EDUCATION**

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This document was created in view to help Panamanian students with their academic journey.

The first section includes a comparison table and analysis of the most employable careers in the United Kingdom, United Arab Emirates, Spain, the United States, and Panama to understand the employability demand in each of these countries.

A deeper examination of the UK case was undertaken, followed by diverse scholarships offered by this country´s academic institutions.

Further, a section of Artificial Intelligence platforms to guide students was included, to exemplify how these tools are extremely useful for students to understand their possibilities and opportunities in relation to their own academic profile.

Finally, a number of companies and agencies were included for schools and individual students to understand how college and career counselling can be a very helpful instrument that keeps track and works tightly with people who wish to study abroad.

# **COMPARISON OF MOST EMPLOYABLE CAREERS**

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Table 1: Most employable careers per country

Overall, it seems that the most innovative fields lead the rankings of most employable degrees across the UK, Spain, the US, Panama, and the UAE. Among the leading degrees, education, finance, and engineering are placed at the top 10 of all analysed countries.

To begin with, Panama’s most employable career is engineering, followed by healthcare and information technology in second and third places, respectively. In relation to the engineering courses, Panama is undergoing significant infrastructure development, which includes projects like the expansion of the Panama Canal, the construction of new ports, and highways, and urban development. These plans require a large number of civil, mechanical, and electrical engineers, which explain the great prospects studying engineering has. Even more, Panama's strategic location as a global logistics’ hub, particularly with the Panama Canal and the International Airport, demands continuous improvements and maintenance of its infrastructure. Engineers play a critical role in ensuring the efficiency and expansion of logistics and transportation networks.

UK universities offer over 3,800 engineering degrees, going from general courses to more specialised degrees like mechanical, operational, manufacturing, electrical, electronic, and even environmental. All these subjects allow students to follow the approach they enjoy when studying in the UK, as well as offer potential career opportunities both in Britain and in Panama, where demand for engineers is growing exponentially. Ultimately, there is an increasing focus on sustainable development and environmental engineering in Panama. To keep the country as a unique Carbon Negative state, is determined to ambitiously commit to building a circular economy with the implementation of renewable energy programmes, improving water management and environmental conservation infrastructures, which require specialised engineering skills.

Following the analysis, it is worth highlighting computer science as the most employable career in the USA. The high demand for technology specialists across sector makes computer science graduates very appealing to many employers across industries, where role opportunities can vary as software developers, data analyst, cybersecurity professionals, and IT supporters. The rapid technology advancement in the industry also leads to high employment opportunities for computer scientists, were rapid innovation and growth lead to an increase in open roles for machines, artificial intelligence and blockchain technology specialists. The technology sector is particularly conducive to remote work, making computer science careers attractive to a broader range of people, enhancing job satisfaction and work-life balance. Another reason for high employability of computer scientists in the USA is the significant investments by both the government and private sector in technology and infrastructure projects, ensuring sustained demand for these graduates. Initiatives aimed at digital transformation and cybersecurity also enhance job stability and growth.

On the other hand, Spain’s most employable career is Business Management and Finance, due to the diverse abilities this degree instructs. In Spain, the economy is diversified with significant sectors that include tourism, manufacturing, and services, which all require strong business management and financial expertise, creating a consistent demand in this field. Also, cities like Madrid and Barcelona are major European hubs, hosting multinational companies and financial institutions. This international business environment offers abundant opportunities for graduates in business management and finance. The start-up eco-system is overlaying the Spanish employments, thus, offering abundant opportunities for graduates in business schools. Ultimately, there is a considerable amount of support from both the Spanish Government and the European Union for business development and innovation. In this matter, a series of programmes have been developed that intend to support small and medium-sized enterprises, simultaneously promoting entrepreneurship demand for finance professionals.

In relation to the UAE, artificial intelligence (AI) specialist seems to be the most employable degree due to different innovation and technology advancements that are increasingly taking place. Firstly, the UAE is actively working to diversify its economy away from oil dependency, and technology, including AI; a key component of this strategy. The government's focus on innovation and technology has led to substantial investments in AI across various sectors. Moreover, the government has launched various initiatives to encourage the use and advancement of IT as the UAE Strategy for Artificial Intelligence 2031, as well as the appointment of the world´s first Minister of State for Artificial Intelligence, aiming to integrate AI into government sectors, driving demand for professionals of this field. Also, the UAE is developing several smart city programmes, including Smart Dubai, which rely heavily on AI technologies to improve urban living through smart infrastructure, transportation, and public services. In this sense, the UAE's strategic location as a business hub connecting Asia, Europe, and Africa makes it an attractive place for tech companies to establish regional headquarters, further boosting the demand for AI professionals. And not only in this country, but any other as Spain, have increasingly expressed their need for AI professionals in all fields. A recent study carried out in different European countries, on more than 500 organisations, expressed that knowledge in artificial intelligence will mean an improvement of 33% of an employee's salary, bringing prospect opportunities for students wishing to pursue a career in the Middle East or Europe.

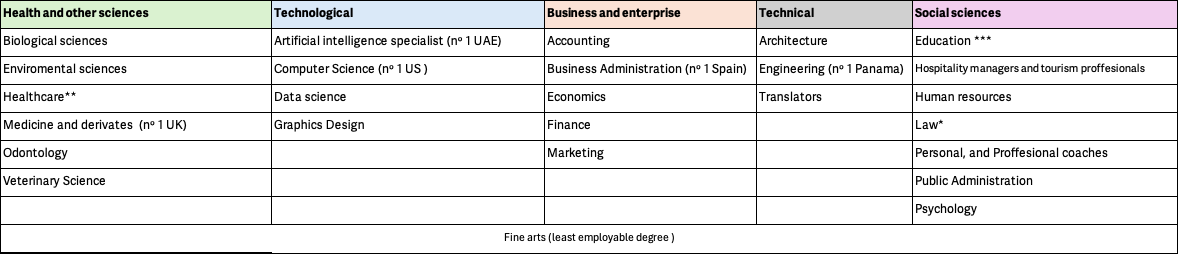


Table 2: Most employable degrees per subjecct

Delving into the case of UK, medicine and dentistry are the most employable degrees, followed by very related careers; veterinary science and allied medicine subjects which involve physiotherapy, radiography, and pharmacy among others. Within this ranking of employable careers, education and architecture are placed fourth and fifth in the list, respectively.

In the medicine field, 130 UK Universities provide over 600 medicine undergraduate degrees that could be combined with other subjects like Surgery - at Lancaster University for instance -, or with Foundation and Gateway years which intend to promote the uptake of higher education, specifically the study of medicine, among those groups that are traditionally underrepresented at university - like the University of Nottingham or Edge Hill University, among many other institutions (UCAS Platform).

Concerning the Health Industry, UK Universities offer over 2,000 health-related courses that include careers such as nursing and public health, but also other specific areas such as mental health and wellbeing, nutrition, or sports specialisation. The reason why medicine is very demanded by employers relies on the NHS shortage (BDI Research), as this healthcare system is facing critical issues due to an increase in demand for doctors which lead to longer waiting times that affect both staff and patients. A lack of growth in the medical workforce has led to over 8,000 vacancies in the field, which results in potential career opportunities for students wishing to pursue a career in medicine, where employability prospects are incredibly high. Similarly, nursing also presents prosperous opportunities for students, finding that 94% of graduates find a job within six months of graduation (NHS).

Regarding Dentistry, 21 universities in the UK offer over 40 undergraduate and post graduate degrees. The University of Glasgow, University of Birmingham, University of Manchester are some Colleges that provide several degrees in the field, highlighting others such as King´s College London, with over 150 students per year, ranked top 1 for dentistry in the world. The employment rate of doctors is 99.4%, having career opportunities as anaesthetist, Cardiologist, Clinical radiologist, General practice doctor, Hospital doctor, and Neurologist. Similarly, allied medical degrees are the third most employable careers in the UK. This field involves jobs such as dietician, nutritionist, therapist, physiotherapist and pharmacist, having a 95.3% employment rate after six-month graduation. In relation to the expected annual salary, six months after graduation, the amount depends on the specialty the graduate chose but is usually around £50.300 for medicine, £30.000 for dentistry graduates, and £34,100 for allied medical subjects.

In between medicine and allied medical studies, the second most employable career in the UK seems to be Veterinary science, having more than 200 degrees in over 50 Universities in the country. This field also allows students to become specialised in areas such as veterinary surgery, biosciences or nursing, resulting in 95.9% employment rate in veterinary recent graduates, and an expected annual salary of around £30,500. UK, having high pet ownership rate with millions of households owing pet, drives consistent demand for veterinary services, as well as in the agricultural setting to care for livestock, being this essential for the country´s farming industry. Also, the UK has strict regulations regarding animal health and welfare, necessitating qualified veterinarians to meet these legal standards, including mandatory health checks, vaccinations, and treatments, particularly for livestock and pets. Veterinary degrees offer diverse career paths, including roles in clinical practice, research, public health, and wildlife conservation, which is also substantially supported by both the government and the industry with incentives that aim to improve animal health, research funding and public awareness campaigns that result in high demand for veterinary science specialist, and nourishing future prospects for this field´s students.

In the fourth place, education is the most employable career in the UK, with a 94.4% employability rate, with over 2,200 courses in 212 institutions around the country, and an expected annual salary of £19.000. The prospects for these graduates are very high for different reasons including stability, progression, diverse employment opportunities, government initiatives, teacher shortages and international recognition. In this sense, teaching is often seen as a stable career with excellent benefits which involve pensions, holidays, and job security. Also, there are numerous opportunities for career advancement within the education sector, teachers can move into senior roles such as department heads, school leadership positions, or even transition into roles within educational policy or administration. Moreover, apart from traditional school settings, teachers can find employment in various educational environments, including private tutoring, online education platforms, adult education, and corporate training programmes, where demand is increasingly rising. It is also worth highlighting that the UK government has implemented various initiatives to improve education standards and outcomes. Programmes like Teach First and government funding for teacher training encourage more individuals to enter the teaching profession. Additionally, there are policies aimed at reducing class sizes and improving teacher-student ratios, which require more teachers and enables higher employment for these graduates. Even more, there are specific subject areas such as in STEM (Science, Technology, Engineering, and Mathematics), modern languages, and special education, where teacher shortages are more pronounced, which increase the employability of education related graduates. Lastly, students that have undertaken an education degree in the UK face huge international opportunities, as UK teaching qualifications are recognised all around the world, allowing teachers trained in this country to find employment in other places as well.

Finally, architecture is considered the fifth most employable career in the UK for diverse reasons, with a 90.1% employability rate, with an expected annual salary of £27.000. This degree is very attractive for students, as urbanisation and population are growing in cities like London, Manchester, and Birmingham, which drive the need for new residential, commercial, and public buildings to design and accommodate spaces for this urban growth. Similarly, the UK is consistently investing in infrastructure development, urban regeneration project and housing scheme incentives that create a constant and rising demand for architects to design and oversee these projects. Also, the UK has a big architectural heritage with several historical buildings in the need to maintain and restore these buildings that enclose the cultural landscape of the country. In addition, the rising emphasis regarding climate change and environmental goals make architectural prospects appealing for future students, as professionals with expertise in eco-friendly designing, energy efficiency and use of sustainable materials are in high demand to meet UK´s regulation and aims that relate to sustainable development. Similarly, to the educational field, UK-trained architects usually enjoy international recognition which allows university graduates to find employment opportunities globally, allowing international mobility that enhance career potentials to UK architects.

Contrary to medicine, veterinary, education and architecture, the least employable career is fine arts. Unfortunately, this degree has the worst career prospects across, not only the UK, but also the US, Spain, the UAE and Panama. This degree has a limited job market compared to other fields, as career such as painting, sculpture and installation are niche and do not have many available positions. The fine art field is highly competitive, as many artists face limited opportunities in exhibitions, galleries and commissions which makes it very difficult for graduates to secure employment. Additionally, fine artists work as freelances which leads to unstable income and often depend on the artist’s reputation, and market demand, which also results in dependence on external funding from grants, sponsorships and government funding. Lastly, the absence of practical skills that fine art degrees teach, limits the employability opportunities in fields outside the arts, as these courses focus on creative and theoretical aspects rather than practical abilities that are directly transferable to other job markets.

# **SCHOLARSHIP OPPORTUNITIES**

In relation to scholarships and financial aid for international students -that are also applicable to Panamanian students-, the distribution of this financial assistance varies by institution and financial source. In General, there might be a larger variety of undergraduate scholarships available, but postgraduate scholarships often offer more substantial financial support due to their focus on research and specialised academic achievement. Within the undergraduate potential scholarships, the University of Warwick offers very attractive financial aid programmes such as the  *[Global Excellence Scholarship](https://warwick.ac.uk/study/scholarships-and-bursaries/undergraduate-global-excellence/)* going from a full-fee financial aid assistance, half fee, or even up to 2.000 pounds. In this same University, the [Albukhary Undergraduate Scholarship](https://warwick.ac.uk/study/scholarships-and-bursaries/scholarships/albukhary/" \l ":~:text=This%20is%20a%20competitive%20scholarship,access%20to%20world%2Dclass%20education). offer up to 20.000 for living costs for international students. The University of York also offers 5 different scholarship programmes for international students, for academic excellence and financial barrier students. Other Universities that offer attractive scholarships include the University of East Anglia and the University of Nottingham.

Furthermore, a very appealing scholarship for international students is the [Chevening Scholarship](https://www.chevening.org/scholarship/panama/). This support helps outstanding emerging leaders who show interest and passion for developing a career in the UK, covering flights, accommodation, and course fees. Applying for a Chevening Scholarship is a competitive and challenging process. Still, there is a huge amount of information and resources provided for students in their website, for students to have the best chance of achieving it.

Some examples of scholarships offered in the UK are placed below, but there are more financing opportunities across the different academic institutions.

For more information about applications to the United Kingdom, Ireland, and Iceland, visit the link at the end of this section, where you will find a 6-step manual specially created having Panamanians in mind and a list with over 200 scholarships in the UK, Ireland and Iceland, eligible to Panamanians.

<https://www.panamaembassy.co.uk/education>

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| --- | --- |
| EOPUK contact details | marjona@mire.gob.pa |
| Name of the scholarship | Dean´s global excellence scholarships |
| Name of the university offering this scholarship | University of York |
| Field of study of this scholarship | Different faculties, including Health sciences and education |
| Financial coverage of this scholarship | Full tuition fee in 1º year, and 10.000 in 2º and 3º year of study |
| Link of the scholarship | <https://www.york.ac.uk/study/undergraduate/fees-funding/international/scholarships/dean-global-excellence-scholarship/> |
| Contact details | international@york.ac.uk |
| Application deadline | academic year 2024-2025 |
| For further information visit the education section of website of the Panama Embassy in the UK | <https://www.panamaembassy.co.uk/education> |

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| --- | --- |
| EOPUK contact details | marjona@mire.gob.pa |
| Name of the scholarship | Think Big Undergraduate awards |
| Name of the university offering this scholarship | University of Bristol |
| Field of study of this scholarship | Different faculties (No medicine, dentistry or veterinary science) |
| Financial coverage of this scholarship | 6.500 or 13.000 |
| Link of the scholarship | <https://www.bristol.ac.uk/students/support/finances/scholarships/think-big-undergraduate/> |
| Contact details | international-office@bristol.ac.uk |
| Application deadline | academic year 2024-2025 |
| For further information visit the education section of website of the Panama Embassy in the UK | <https://www.panamaembassy.co.uk/education> |

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| --- | --- |
| EOPUK contact details | marjona@mire.gob.pa |
| Name of the scholarship | Vice Chancellor Global Scholarship |
| Name of the university offering this scholarship | University of Reading |
| Field of study of this scholarship | All faculties |
| Financial coverage of this scholarship | 4.000 each year |
| Link of the scholarship | <https://www.reading.ac.uk/ready-to-study/study/Fees-and-funding/undergraduate-scholarships#:~:text=VICE%20CHANCELLOR%20GLOBAL%20SCHOLARSHIP%20AWARD%202024%2F25&text=100%20scholarships%20of%20%C2%A34000,information%20about%20the%20application%20process>. |
| Contact details | ugadmissions@reading.ac.uk |
| Application deadline | academic year 2024-2025 |
| For further information visit the education section of website of the Panama Embassy in the UK | <https://www.panamaembassy.co.uk/education> |

# **STUDY GUIDANCE POWERED BY AI**

Artificial Intelligence (AI) has become a globally accessible tool to facilitate students a guide into their educational journey. AI-powered programmes such as Chat GPT, Google Gemini, and Microsoft Co-Pilot, can fil the gaps for school, undergraduate and post-graduate students who not necessarily have access to a career counsellor. The following table projects a template of information about a student, that can be asked to an AI platform to get advice on the next steps of that person’s career. An example is also placed on the table, but it should be modified with the specific needs and interests of the student.

| **General Prompt** | **Example Prompt** |
| --- | --- |
| *[Enter any AI platform and put the following information]*  Can you guide me in what undergraduate degree I should study?  Identity:   * Gender * Age * Nationality   Academic   * Current diploma being studied * Subjects * Grades/expected grades   Interests and skills   * + What subjects you enjoy the most   + What subject you enjoy the least   + What subjects you excel in   + Particular topics you are passionate about outside school?   + Any specific talent or skills (sports for instance) * Career goals   + Any particular industry, market, profession or location you are drawn to?   + What do you value in a career (e.g., helping others, creativity, stability, high income)?   + What kind of work environment do you prefer (e.g., office, outdoor, flexible hours, online job)?   Please provide me with universities, skills, entry requirements and extra information I would find useful in my applications.  *[After first answer comes up, you may ask:]*   * what of those courses have the best employability? * what universities offer those courses and the best financial aid or scholarships for international students, or sports (if the student is eligible), or economic conditions? | *[Enter any AI platform and put the following information]*  Can you guide me in what undergraduate degree I should study?  Identity:   * Gender: Male * Age: 16 * Nationality: Spanish   Academic   * Current diploma being studied: IB Diploma * Subjects: High level English, High level Business Management and High Level Global politics. In standard level, I am studying Environmental sciences, application and interpretation Maths, and Spanish Literature. * Grades/expected grades: Predicted grade of 38/45   Interests and skills   * + What subjects you enjoy the most: Global Politics and Business Management   + What subject you enjoy the least: Environmental sciences   + What subjects you excel in: Global Politics and English   + Particular topics you are passionate about outside school?: Sports like Tennis, golf, football as well as architecture   + Any specific talents or skills (sports for instance): Tennis * Career goals   + Any particular industry, market, profession or location you are drawn to?: Business, in Madrid   + What do you value in a career (e.g., helping others, creativity, stability, high income)?: Creativity, passion, innovation   + What kind of work environment do you prefer (e.g., office, outdoor, flexible hours, online job)?: Flexible hours, and hybrid job   Please provide me with universities, skills, entry requirements and extra information I would find useful in my applications.  *[After first answer comes up, you may ask:]*   * what of those courses have the best employability? * what universities offer those courses and the best financial aid or scholarships for international students, or sports (if the student is eligible), or economic conditions? |

# **COUNSELLOR AGENCIES**

In addition to Artificial Intelligence tools, there are specialised agencies and companies which take a more active role in the guidance for students. In this sense, for example, [*Bridge U*](https://bridge-u.com/) and [*UniFrog*](https://www.unifrog.org/), collaborate directly with schools and college counsellors, providing platforms and resources to help people navigate into the process of applying to universities. Also, other companies such as [Crimson education](https://www.crimsoneducation.org/uk/campaign-pages/branding-ptc-09-21-lp/?utm_source=p_search&utm_medium=ga_ppc&utm_campaign=UK_core_2024-01-10_search-education-consultant-ptc_contact&utm_term=admissions%20consultant&gad_source=1&gclid=CjwKCAjw7NmzBhBLEiwAxrHQ-eAzrc3QbEUHeeZ4SGNysMevA797hFL7EIfNUxbxyCiuiR63jmK8hRoColEQAvD_BwE), [Into Education](https://education.intostudy.com/study-at-intolondon-es?utm_campaign=21400939405&utm_source=google&utm_medium=cpc&utm_content=&utm_term=&adgroupid=&campaignid=21400939405&adid=&gad_source=1&gclid=CjwKCAjw7NmzBhBLEiwAxrHQ-aEZ_efOqu2Kz85d91y1G1gmtbHmSjwr4rGplSjCgng9jDxAindHbBoCV3cQAvD_BwE), [AHZ Associates](https://ahzassociates.co.uk/), [Ascend now](https://ascendnow.org/undergraduate-college-admissions-support/?utm_term=university%20counseling&utm_campaign=TDD_GS_Admission_Counseling_London&utm_source=adwords&utm_medium=ppc&hsa_acc=8343412701&hsa_cam=21392131172&hsa_grp=169370939731&hsa_ad=703119760024&hsa_src=g&hsa_tgt=kwd-303314399508&hsa_kw=university%20counseling&hsa_mt=e&hsa_net=adwords&hsa_ver=3&gad_source=1&gclid=CjwKCAjw7NmzBhBLEiwAxrHQ-SM4xhXzFwGzMJJLKZoe_bnrMN4Z2G_KK6YvDtyis79N5YcHWbGYsRoCG0IQAvD_BwE), and [CIS](https://www.cois.org/for-students-and-parents/students), collaborate directly with individual students who are interested in going to universities in the UK specifically, but also other countries such as the USA or Spain.