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Strategies to Enhance the Graduate Employability: Case Study from the Faculty of Computer Science, University of Brawijaya, Indonesia

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ABSTRACT

This study examines the employability of graduates from the Faculty of Computer Science, Brawijaya University, by addressing three key aspects: graduate readiness for the labor market, barriers to employability, and strategies to enhance graduate employability. This study used a qualitative research approach with single case study to investigate the strategy that can be implemented to enhance graduate employability of the Faculty of Computer Science. Data was collected through semi-structured interviews. Data was collected from 20 alumni who graduated in 2023 and 2024 and 4 teachers from the Department of Informatic Engineering and Department of Information System from the Faculty of Computer Science, University of Brawijaya, Indonesia. The CareerEDGE model and the Employability Skills Framework guided this research by providing a comprehensive understanding of employability. The findings of this study show that graduates' readiness is affected by a lack of knowledge and skills, a lack of practical skills, and inadequate soft skills. The study found that the barriers faced by graduates in entering the job market include skill gaps to industry demand, lack of practical experience, high competition in the industry, geographical or mobility issues faced in finding employment, and lack of confidence in abilities. This study offers several strategies that can be implemented to enhance graduate employability, namely aligning the curriculum with industry needs, strengthening collaboration between academic and industry, and improving career guidance and counselling services.

Keywords: Graduate Employability, Labor Market Readiness, Barriers to Employability, Higher Education Strategies, Strategy to Enhance Graduate Employability

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INTRODUCTION

In higher education, graduate employability remains a crucial issue, especially in Indonesia, where institutions are supposed to give students the abilities and skills necessary to thrive in a competitive and quickly evolving job market (Isbah, 2023). Despite the conceptual differences between employability and employment, government financial mechanisms and accountability systems frequently center assessments of institutional success on graduates' employment outcomes (Bridstock, 2019; Miotto, 2020). However, many graduates still face a persistent gap between their qualifications and the actual demands of the job market.

While many previous studies on graduate employability in Indonesia have focused on general policy or on measuring employment outcomes, very few have examined—through an in-depth case study—the readiness, barriers, and strategies for employability of graduates in one specific faculty of computer science.

This study addresses the gap by simultaneously analyzing three key dimensions—graduate readiness, barriers to employability, and strategies for enhancement—among FILKOM Universitas Brawijaya graduates, whereas earlier works often focus on only one of these aspects. It also applies the CareerEDGE model and the Employability Skills Framework to a local Indonesian context, an approach that has rarely been explored in prior studies.

Globalization, demographic changes, technology breakthroughs, and shifting economic conditions have all had a substantial impact on the labor market itself. Graduates must be flexible, creative, and possess a wide range of technical and people skills to succeed in these circumstances (Makhalina, 2023; Mgaiwa, 2021). Despite several educational changes, Indonesia's university graduates continue to have a worrying unemployment rate. In 2024, 872,000 unemployed people with a university degree accounted for 12% of the total unemployed population (Statistics Indonesia, 2024). Employers frequently cite a lack of practical experience and shortcomings in both technical and soft skills as the main causes of their inability to identify qualified applicants (Populix & KitaLulus, 2024).

Higher education institutions have responded by implementing several employability-boosting measures, such as curriculum reform, industry collaborations, and the use of tracer studies to assess graduate results. The Faculty of Computer Science (FILKOM) at Universitas Brawijaya is one of the establishments dedicated to enhancing graduate preparedness. FILKOM, the Faculty of Computer Science at Universitas Brawijaya, faces several challenges that make it an appropriate setting for this study. As one of Indonesia's largest computer science faculties, FILKOM has a **rapidly growing student population** and offers programs closely linked to the national demand for digital skills. Tracer studies at FILKOM, however, show that many graduates still struggle with issues including mismatched skills, long job search times, and low self-esteem (Tracer Study FILKOM, 2023).

This study investigates the employability of FILKOM graduates by examining three main areas: their readiness to enter the labor market, the barriers they face, and the strategies that can enhance their employability. This study makes a scientific contribution by extending the literature on graduate employability in developing countries through an in-depth analysis of a leading computer science faculty in Indonesia (FILKOM, Universitas Brawijaya).

RESEARCH METHODS

This study used a single case study design and a qualitative research approach to investigate ways to improve graduate employability at Universitas Brawijaya's Faculty of Computer Science (FILKOM-UB), Indonesia. A single case study is considered appropriate for this research because the main objective is to gain an in-depth understanding of graduate employability within the specific institutional and cultural context of the Faculty of Computer Science (FILKOM), Universitas Brawijaya. FILKOM represents a relevant and information-rich case: it is one of the leading computer science faculties in Indonesia, faces employability challenges identified in its tracer study, and serves as a microcosm of wider issues in higher education regarding the transition from university to the labor market. A qualitative approach was selected to provide a comprehensive, contextualized understanding of the opinions, experiences, and recommendations of important stakeholders, especially faculty and alumni, concerning graduate readiness, challenges in entering the job market, and institutional strategies for improving employability.

This methodology was guided by the CareerEDGE Model Sewell (2007) and the Employability Skills Framework (Yorke, 2004). The CareerEDGE Model offers a comprehensive view of employability by integrating five essential components: career development learning, experience, degree-subject knowledge, generic skills, and emotional intelligence. Complementing this, the Employability Skills Framework provides guidance on how higher education can systematically foster these competencies. These models informed the development of the interview protocols, ensuring that questions for alumni and lecturers addressed the full range of employability dimensions. So that data collection was firmly aligned with established theories of graduate employability.

Participants in this study were selected through purposive sampling, comprising two primary groups. The first group consisted of 20 alumni who graduated in 2023 and 2024, selected across five undergraduate study programs: Informatics Engineering, Computer Engineering, Information Technology Education, Information Systems, and Information Technology. From each program and graduation year, two alumni with a minimum GPA of 3.00 were purposively selected, ensuring balanced representation. The study's sample included both students who are employed and those who are unemployed but seeking employment. There are 10 students who are employed, and 10 students who are unemployed but eager to find employment.

The second group involved faculty members, namely lecturers from the Department of Informatics Engineering and the Department of Information Systems at FILKOM. Lecturers involved in this study were selected based on their position, interests as FILKOM lecturers, and active engagement in supervising student projects, internships, or career development activities. A total of four lecturers participated, with two representatives from each department.

Data collection was conducted through semi-structured interviews, allowing for flexibility in exploring participants' views while maintaining consistency across core themes. The interviews were conducted online, recorded with participants' consent, and transcribed verbatim. The interview protocol covered three main areas: graduate readiness for the labor market, barriers to employability, and suggested strategies to enhance employability.

RESULTS OF RESEARCH AND DISCUSSION

Graduate Readiness in Entering the Labor Market

The results of the study indicate that graduates from the Faculty of Computer Science at Brawijaya University still face several challenges regarding their readiness to enter the labor market. The analysis is based on interview data from alumni and faculty. Three main aspects affect this readiness: (1) lack of knowledge and skills, (2) lack of technical skills, and (3) insufficient soft skills.

1. Job Market Readiness Affected by a Lack of Knowledge and Skills

Many graduates stated that their readiness was hindered by a lack of foundational knowledge and specialized skills, especially in coding and data-related competencies. While coding is a fundamental skill expected from computer science graduates, many felt they only gained basic or general knowledge during their studies. These gaps were attributed to curricula that emphasized theoretical concepts over practical, in-demand skills.

Participant P105, for example, expressed:

> *"If we're talking about technical skills, it might be the coding skill. If it's like developer or mobile developer, I'm not confident in that field."*

This statement reflects a lack of confidence rooted in a curriculum that provides limited specialization. Even graduates from technical programs, such as Information Technology or Informatics Engineering, felt that their exposure to coding was shallow or unfocused. P109 stated:

> *"I came from a study program where the coding load is not as much... so in IT, we are taught various things, not just coding, so there are also system analysis courses."*

Graduates also reported limited exposure to data skills, including databases and data analysis systems—essential competencies for positions like software engineer or data analyst:

> *"During study, I was taught some of that related to database systems. Yes, in my opinion, I didn't understand it well during my studies."* — P103

From a faculty perspective, these limitations were recognized. Lecturer P201 emphasized that although students come from varied specializations, basic coding should be universally mastered:

> *"Because we are a Faculty of Computer Science, the basic knowledge they have to understand is coding, even if they don't have to be experts."*

According to this perspective, there is a gap in the curriculum, with variety being valued more highly than depth, which leaves students unprepared for jobs demanding specialized abilities. These results support those of Binks (2020), who pointed out that colleges frequently offer fundamental knowledge without guaranteeing congruence with specific, changing industrial demands.

2. Student Readiness Affected by a Lack of Technical Skills

Many graduates reported difficulties in developing **technical skills** beyond foundational knowledge—particularly in areas such as system analysis, programming, and the use of industry-standard tools (e.g., Python, Power BI, Looker Studio). As Participant P102 explained,

> *"Informatics engineering graduates are not far from being programmers... but in terms of programming, I still lack the skills; the programming scripts are lacking."*

This aligns with studies showing that employers in Indonesia's ICT sector frequently highlight mismatches between graduates' skills and workplace requirements, especially in coding proficiency, data management, and the application of modern software tools (Populix & KitaLulus, 2024; Jackson, 2014).

This suggests a disconnection between job roles typically assumed by graduates and their actual preparedness. Similarly, P110 explained how limited practice in advanced Python and visualization tools affected her readiness:

> *"I'm still limited to ordinary coding… Meanwhile, there is Power BI of all kinds, so it's more about the tools that make the skill gap."*

Other graduates expressed difficulties in system design and implementation, which are critical for roles in software development:

> *"So sometimes the requirements from the company and the results of the implementation don't match… there still needs to be a lot of revision."* — P109

This supports the findings of Kamble (2019), who discovered that the main barrier to graduates' employment is their inability to gain practical experience with industry-relevant tools and processes. Though they may teach theory, traditional lecture-based formats sometimes overlook application, which is becoming more and more important in the technology industry.

3. Student Readiness Affected by a Lack of Soft Skills

In addition to technical gaps, soft skills deficiencies were widely reported. Participants mentioned about feeling inadequate in areas including resilience, communication, teamwork, and confidence—skills essential for expressing ideas, adjusting to work surroundings, and working together successfully.

Participant P117 noted:

> *"Actually, the projects given have been quite helpful, but it's still not enough... soft skills here are more important than hard skills."*

This reflects a critical insight: even if technical knowledge is adequate, the inability to communicate or apply that knowledge effectively may hinder employability.

Participant P115 pointed out that teaching methods didn't always foster active participation:

> *"Because there are some lecturers who teach only presentations, explaining all the theory… so if that's all I got from campus, it was not enough."*

Moreover, participants acknowledged that opportunities for soft skill development existed (e.g., through student organizations), but were often underutilized:

> *"I personally was not very active in participating in activities such as organizations and committees… so I didn't feel that I was ready with the soft skills."* — P110

Faculty also observed similar challenges. Lecturer P203 stated:

> *"The actual shortcoming is in their soft skills, especially resilience… how these students struggle."*

The analysis of these responses shows that students frequently don't take the initiative or know how to build soft skills outside of the classroom. According to Robles (2012), soft skills like communication and adaptability are just as crucial in the workplace as technical abilities, but they are more difficult to teach and frequently disregarded.

Barriers Faced by Graduates of the Faculty of Computer Science for Employability

This section explores the key barriers that hinder computer science graduates' employability based on interviews with alumni and faculty. The findings are organized into five major themes: (1) skill gaps, (2) lack of practical experience, (3) high industry competition, (4) geographical/mobility issues, and (5) low self-confidence.

1. The Skill Gaps to Industry Demands

Graduates consistently reported a mismatch between university-acquired skills and industry expectations, especially regarding programming proficiency and relevant technologies.

> *"To be honest, the skills that are still lacking are in the coding. Because at that time I focused on UI/UX."* — P101
>
> *"As an Informatics Engineering graduate... the programming skills were still lacking. HR usually asks about that."* — P102

This gap includes not only the depth of coding ability but also the mismatch of programming languages. For example, while universities taught C/C++, companies often required Java, JavaScript, Python, or C#.

> *"In college it's C and C++, but in my office, they use C#."* — P103
>
> *"In EduTech companies, we use Python and Scratch, which weren't really taught."* — P118

The finding confirms Jackson (2014) statement that gaps in employability preparedness occur when academic programs frequently fall behind the industry's technological demands.

2. The Lack of Practical Experience

Many participants lacked practical experiences that may improve their portfolio and prepare them for the workforce, including internships or real-world projects.

> *"My internship and portfolio were still lacking, which affected my job applications."*—P107

> *"My internship was in a different field than the one I applied to."* — P108

Some participated in government programs like *Kampus Merdeka*, but these were often seen as insufficient for meeting industry standards.

> *"I joined a capstone project during Kampus Merdeka, but it wasn't strong enough to build my portfolio."* — P110

Participant P104 also confirmed that internship records were commonly required in job applications:

> *"During my job applications, I must include internship or work experience. I can only mention my internship during the Kampus Merdeka program."* — P104

These narratives highlight that while internship programs exist, students often perceive them as too brief, mismatched, or insufficiently intense to build a strong professional identity or portfolio.

The findings are consistent with those of Wilton (2012) and Silva et al. (2018), who highlighted that internships greatly improve employability but that their effectiveness depends on matching industry demands.

3. High Competition in the Industry

High competition in the IT industry is a major barrier for graduates entering the workforce. Participants reported that they were not only competing with their peers but also with career-switchers and experienced professionals—especially after the pandemic and during the ongoing "tech winter," which has led to mass layoffs and slowed industry growth.

> *"Now there are a lot of IT graduates, while job vacancies are actually quite many, but the requirements are sometimes beyond reason."* — P107

> *"Very intense… it's not just IT graduates anymore. Now there are more people switching into tech."* — P111

Several participants noted that although job vacancies in the IT field continue to increase incrementally, the growth is not proportional to the number of graduates entering the market each year.

> *"Jobs are only increasing a bit every week, but IT graduates are growing much faster. That's a barrier for me."* — P120

One faculty member emphasized that the competition has become more complex, with many non-IT graduates retraining and entering the tech field, making the talent pool even more crowded and diverse.

"IT students now compete not just with their peers, but also with others who've switched to IT from different majors." — P203

Most students agreed that competition was still a major worry and source of pressure when navigating the job market, even though others claimed it was not a substantial personal challenge.

According to Holmes (2013), employability in the modern workforce involves more than just talents; it also involves how recent graduates position and sell themselves in a competitive job market. For graduates of public universities, especially those without robust portfolios or access to elite networks, the competitive atmosphere adds to the pressure.

4. Geographic or Mobility Issues Faced in Finding Employment

Geographical and mobility-related issues became major obstacles for job-seeking graduates, particularly those living in rural or less developed areas. Participants reported they had trouble finding work because there weren't many IT jobs in their hometowns, and they couldn't move due to personal reasons.

"Maybe it's the distance factor since I live in Lampung, because there are few job openings here." — P101

In addition to being geographically isolated, other participants had familial restrictions that prevented them from relocating to bigger cities like Jakarta, which has a higher concentration of IT jobs.

"I wasn't allowed to leave Malang… the jobs I wanted, especially in EduTech or UI/UX, were mostly in Jakarta. Even when I was accepted, my parents didn't allow me to take it." — P106

"I live in a rural area with few IT vacancies. But when I try to apply elsewhere, my parents don't let me." — P115

Others, like P109 and P120, also acknowledged personal reluctance to relocate far from family or social networks, which narrowed their job search area.

"I'm from Kalimantan, but IT jobs are rare there. I had to look for jobs in Java." —P109

"I prefer applying only in Jabodetabek. I don't want to work far because I get homesick easily." — P120

A lecturer (P201) confirmed that this issue often limits student employability, as some graduates are unwilling to leave their home regions despite fewer local opportunities.

"Some students just don't want to move out of Malang. We can't force them, even though Jakarta offers more jobs." — P201

These findings align with the (ILO, 2021), which emphasizes that access to high-skilled occupations concentrated in urban areas is frequently limited in developing nations due to geographic immobility. Mobility is a key component of employability that interacts with social, cultural, and financial limitations, according to McQuaid and Lindsay (2005).

5. Lack of Confidence in the Abilities

Many graduates reported they lacked confidence when they applied for jobs, even though they had academic knowledge and relevant skills. Perceptions of inadequacy, out-of-date status as a graduate, a lack of experience, or unrelated educational backgrounds were frequently the causes of this psychological barrier.

> *"I graduated in 2023, and now it's 2024—many new graduates have come in. I feel like I've lost my edge."* — P105

Some participants expressed insecurity despite having work experience, particularly due to weak portfolios or a lack of certifications.

> *"I have some experience, but I'm still not confident. Maybe because my portfolio is weak, and I don't have certifications."* — P106

Educational background mismatch also contributed to lower self-esteem. Participants from education-based IT programs felt disadvantaged compared to those from design or computer engineering backgrounds.

> *"I have an education degree, but I'm applying to design jobs. I feel less qualified than graduates from graphic design programs."* — P108

A lack of experience and continuous rejection were mentioned by others as reasons why their confidence was damaged during the job search.

> *"I always fail at interviews. I feel stuck and not confident in securing a job."* — P112
>
> *"I'd rate my confidence 5 out of 10. I lack practical skills and experience like internships or certifications."* — P119

According to Holmes (2013), being employable involves more than just learning new skills; it also involves being able to project oneself as a competent professional. Similarly, Finch et al. (2013) argues that a graduate's degree of confidence in their technical competencies has a significant impact on their ability to succeed in the labor market.

According to a lecturer (P202), students in IT programs that focus on education frequently experience feelings of insecurity because they must compete with graduates who have degrees that are more closely related to the IT industry.

> *"They'll be competing with computer science or engineering graduates, while their title is Bachelor of Education. That lowers their confidence."* — P202

The Strategies Can be Implemented to Enhance the Graduate Employability of the Faculty of Computer Science

This section discusses strategies for enhancing the employability of FILKOM, Universitas Brawijaya, computer science graduates. Based on interview findings and literature, three key strategies are proposed: curriculum alignment with industry needs, stronger industry-academia collaboration, and enhanced career guidance and counselling.

1. Aligning the Curriculum with Industry Needs

To address the skills gap, the curriculum must be responsive to technological trends and employer expectations. At FILKOM, curriculum restructuring occurs every four years, informed by feedback from alumni and industry.

> *"There is feedback from alumni that courses like human resources are important to be included in PTI, because education people also deal with humans too."* — P201

Additionally, foundational courses such as calculus and flow programming are being considered as compulsory across all study programs to foster critical thinking and technical depth.

> *"In the future, calculus and algebra courses will become compulsory for all FILKOM programs."* — P201

Portfolio development is a central focus. Capstone projects were introduced to ensure students graduate with tangible, demonstrable outputs.

> *"Students who are not active lack portfolios. So, we push them to take capstone projects to produce products."* — P203

The **MBKM (Merdeka Belajar Kampus Merdeka)** program is also supported to increase real-world exposure and credit-earning through internships and independent projects.

> *"In semester 6, students can take internships or other activities that can be converted into 20 credits."* — P203

This aligns with Finch et al. (2013) and Jackson (2014), who argue that curricular relevance and experiential learning are key determinants of graduate employability.

At the Faculty of Computer Science (FILKOM), several important strategies are used to enhance graduate employability, with an emphasis on aligning academic curricula to industry demands. These include: (1) aligning the curriculum with industry needs; (2) integrating a capstone project course to help students build strong portfolios and practical skills; (3) expanding Merdeka Belajar Kampus Merdeka (MBKM) activities to provide real-world experience through internships and independent projects; and (4) establishing continuous feedback loops with industry stakeholders to ensure the curriculum remains aligned with evolving market demands and technological advancements.

2. Strengthening Industry-Academia Collaboration

Strong collaborations with industry are necessary to close the gap between workforce demands and academic achievement. Collaboration between industry and academics is viewed at FILKOM as a critical strategy to enhance graduate employability by incorporating practical relevance into academic instruction.

(1) Involving Industry in Learning and Curriculum Development

The first strategy is to invite industry professionals to participate in the learning process including guest lectures and joint curriculum design.

"Collaboration like this can actually be continued by providing space for friends in the industry to show themselves more in helping students. Like a guest lecture by inviting the CEO... maybe FILKOM can have an opportunity for internships." — P201

"The strategy is to invite the industry to be involved in the learning process or the development of the current curriculum... Although the channels have been opened... it still cannot be a joint movement." — P202

(2) Establishing a Mini-Industry Within the Faculty

The second strategy aims to build a *mini-industry* or a *pitching factory* within the faculty. This area will serve as a collaborative lab where academics, industry experts, and students will co-create and innovate.

"That is to create a kind of mini-industry in FILKOM... we are building a research and innovation building to be rented out to the industry... they can have an office there and at the same time become partners for curriculum development." — P202

(3) Building Systems to Identify and Develop Students' Potential Early

The third strategy is to give industries the opportunity to identify possible talent early on, such in the fifth or sixth semester, by providing training courses that are followed by guaranteed hiring.

"How the industry can detect talents as early as possible... potential talents from ITE students can be recruited into their industry... After completion, they will be recruited." — P202

(4) Repositioning the Curriculum Structure

Another strategy is to review the curriculum's structure and acknowledge co-curricular and extracurricular activities as legitimate educational opportunities in addition to credit-bearing courses.

"The curriculum consists of 3 things. The first is the intracurricular, extracurricular, and co-curricular... activities outside of conventional lectures... should be design by the curriculum." — P202

(5) Developing Partnerships, Guest Lecturers, and Joint Research

The fifth strategy focuses around collaborative research, internships, guest lecturers, and sharing research insights.

"We now need to develop programs to work better with the industry... internships and guest lectures... invite practitioner lecturers... exchange research information... create a joint lab." — P203

In support of these strategies, Pereira and Costa (2017) emphasize the value of collaboration platforms in coordinating academic outputs with industrial demands, which promotes innovation and enhances employability for graduates. As demonstrated at FILKOM, these collaborations co-create relevant educational experiences in addition to offering real-world exposure.

3. Improving Career Guidance and Counselling

The main issue, according to interviews with many faculty members (P202, P203, and P204), is the irregular execution of career-related initiatives such industry-specific orientation sessions, interview training, and resume writing workshops.

Participant **P202** stated that:

> *"Workshops related to interview skills have been held every once a year. Now if it's a matter of frequency, I think it's still lacking... one of them should provide training related to the workforce."*

Participant P202 also emphasized the importance of consistent services:

> *"Providing services with a high frequency related to preparation for the workforce, in my opinion, because the higher the frequency, the better the service."*

Participant **P203** acknowledged the university's broad scope and its challenge in managing personalized career support across all faculties:

> "The only challenge at UB is that we mean a lot and spread to all fields. Finally, we prepare small teams in each faculty."

Although the resources offered are comprehensive, encompassing subjects like corporate profiling, CV writing, and personality testing, participant P203 remarked that FILKOM's implementation is still patchy:

> *"In FILKOM itself, it is not routine. It should be routine. We hope it should be routine, but it is indeed a big challenge."*

Participant **P204** also confirmed:

> *"The frequency of implementation is still lacking for FILKOM itself. So not all students get this opportunity... Incidentally, FILKOM itself rarely organizes activities like this."*

Faculty concerns reflect broader academic insights. Mowes et al. (2021) emphasize that frequent and targeted career counselling—including CV writing and interview skills—is essential for preparing students for employment Clarke (2018) adds that these services must go beyond information sharing to develop practical, confidence-building skills aligned with industry needs.

Additionally, Finch et al. (2013) argues that aligning the curriculum alone is insufficient. Career services play a crucial role in helping students effectively showcase their competencies and navigate the job market.

CONCLUSIONS AND SUGGESTIONS

Conclusion

The Faculty of Computer Science's graduate employability was investigated in this study by looking at graduate readiness, challenges faced, and strategies for improvement.

Research indicates that many graduates are not prepared for the industry because they lack soft skills and real-world coding experience. Even though they have academic knowledge, it is still challenging to translate it into abilities that are applicable to the workplace. Their lack of portfolio development and inadequate teamwork and communication abilities further hinder their readiness for the workforce.

Several barriers were found, such as a lack of exposure to real-world experience, such as internships, intense job competitiveness, problems with regional mobility, inadequate self-confidence, and skill gaps between academic learning and industry demands.

Enhancing collaboration with industry partners, strengthening project-based learning (such as capstone projects and internships), matching the curriculum to industry expectations, and expanding access to career counseling are some of the main strategies used to address these issues.

Suggestion

This study proposes several strategic recommendations to improve the employability of graduates from the Faculty of Computer Science. These suggestions are addressed to three key stakeholders: alumni, faculty, and future researchers.

1. **Recommendations for Alumni**

   The first recommendation is addressed to alumni and is as follows:

   - **Build a Professional Portfolio**: Alumni are advised to actively build a project-based portfolio relevant to their field of interest.
   - **Develop Non-Technical Skills**: Essential non-technical skills such as communication, leadership, teamwork, critical thinking, and problem-solving should be improved through training programs, organizational involvement, and competitions.
   - **Adaptation to Industry Needs**: Alumni must participate in professional development programs and online courses to keep their skills up to speed with changing technologies.
   - **Expand Professional Networks**: Building connections via Linkedln, job fairs, seminars, and industry-related conferences can open career opportunities.
   - **Embrace Lifelong Learning**: Continuous self-improvement through online learning and certifications in necessary to stay competitive in the fast-changing tech industry.

2. **Recommendations for the Faculty**

   The second recommendation is addressed to the faculty and is as follows:

   - Align Curriculum with Industry Demands: Collaborate with industry to ensure curriculum matches job market demands.
   - Increase Practical Learning Opportunities: Prioritize internships, projects, and guest lectures to bridge theory and real-world skills.

- Strengthen Career Support & Soft Skills: Offer regular career workshops and counseling; encourage extracurriculars to build essential soft skills.

3. Recommendations for Future Researchers

The third recommendation is addressed to future researchers and is as follows:

- Evaluate the long-Term Impact of Practical Programs: Research should examine how internships and hands-on experiences influence graduates' long-term employability and career growth.
- Analyze the Role of Soft Skill Development: Examine the effectiveness of graduates' instruction and use of soft skills and look for creative ways to include them into curricula.
- Conduct Comparative Studies Across Universities: Comparative research between public and private institutions can help identify best practices that could be adopted by the faculty.
- Explore Emerging Industry Needs: To inform curriculum and instructional strategies, studies need to track changing skills requirements in fields including data science, artificial intelligence, cloud computing, and cybersecurity.

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