Using Artificial Intelligence for Job Matching Platforms
Thursday, February 20, 2020 | 9:30am – 11:00am EST | G8–090 & Webex
Skilllab

Karim Bin-Humam, Director of Project Delivery
AI-based competency profiling for labour market inclusion
Vision
A world in which everyone is empowered to follow their dreams and access opportunities regardless of their background to contribute socially and economically to their society.

Mission
To help uncover personal pathways to social and economic participation based on a person’s skills, interests, and values.

Partners
Public, private, and civil society organizations working to support the inclusion of people traditionally excluded from labour markets.
Labour market marginalization

Traditional labour market approaches exclude disadvantaged groups

**Who are you?**

- Syrian, Woman, Refugee

**Exclusion**

**Titles**
- Project manager
- Transfer pricing consultant
- Education specialist
- Athletics director

**Degrees**
- Bachelor of Science (B.Sc.)
- Master of Fine Arts (MA)
- Certified Public Accountant (CPA)
- Doctor of Medicine (MD)

**Networks**
- Employers & academic references
- Industry associations and trade groups
- References
Labour market inclusion

Competency profiling makes skills visible and marketable

**What** can you do?

Reem Nouh

**Inclusion**

**Skills**
- Sterilization techniques
- Handle customer expectations
- Utilize measurement instruments
- Cater meals for large events

**Knowledge**
- Organic chemistry
- Human physiology
- Clinical cytology
- Event planning & coordination
- Industrial cooking processes

**Ambitions**
- Flexible hours to support a family
- Human interaction
- Culture
- Event planning & coordination
Use Case: Refugees in Europe

Employment and career advisors often struggle to provide effective career support to migrants and refugees.

Barriers to success

- **Lack of formal certifications** reduce chances for job interviews
- **Language barriers** make communication difficult
- **Difficulty to self-express** create unclarity about a person’s skills
- **Information asymmetry** makes it difficult to translate a person’s skills to jobs
Use Case: Refugees in Europe

An AI-based skill profiling tool generate rich skill profiles for job seekers fast and in any language.

Key features:

- Job seekers use mobile app in **native language** and results get automatically translated.
- Independently performed skill assessment, using a **database of 13,485 skills**.
- **Skill-based matching** to 2,942 occupations in the European labour market.
- Culturally and sector specific **resume templates** to export results.
Our Solution: Competency Profiling with AI

Our Skill assessment is always embedded in existing services

**Job Seekers**
Use mobile app to perform skill assessment and explore results

**Counsellor**
Can access the results of skill assessment via admin portal

Skill Assessment is used for:

- **Career Counselling** by showing how a job seekers skill set fits into the job market

- Skill and competence-based job matching

- Identify learning opportunities to recommend vocational training
Mobile application: On-boarding

As a first step, job seekers register to perform the skill assessment

**Invitation**

1. Career advisors invite job seekers by email
2. Job seekers install app or register online for skill assessment.
3. Job seekers register and provide personal information for resume

**Intuitive workflow**

The mobile app is designed for ease of use and allows job seekers to develop their skill profile independently and on their own device.
Mobile application: Timeline

Job seekers build a timeline of all their jobs, education and other experiences

Timeline

Job seekers add all relevant experiences

- Jobs
- Education
- Other

Guidance to complete timeline

Messages guide the user to file all relevant experiences
Mobile application: Timeline

Job seekers build a timeline of all their jobs, education and other experiences

Capture informal experiences during which skills are learned

Skills are captured outside of the formal workforce

Parenting for example requires child care skills, planning and logistics, and many other skills
Mobile application: Skill assessment

Job seekers perform a skill assessment for every experience on their timeline

Assessment

Progress indicator
The assessment continues till the assessment engine explored experience

Experience intensity
Job seekers indicate if and how intensely they used a skill

Interview by assessment engine
Drawing on a database of 13,485 skills, our Artificial Intelligence (AI) interviews the job seeker
Mobile application: Occupation Matches

Job seekers use the occupation match overview to orient themselves in the labour market.

**Occupation Matches**

- **Career goal orientation**
  Users can browse occupations, review their suitability, and adapt their stated career goals.

- **Ranked matches**
  A comprehensive list of occupations ranked by skill fit.

- **Searchable list of occupations**
  Users can explore how their skill set matches to any of nearly 3,000 recognized occupations.
Mobile application: Skill matches

Users can explore in detail how their skills match any occupation

**Occupation description**
The user can use the model to explore specific occupations in greater depth

**Skill Matches**
A breakdown of which skills the user has which are relevant to a occupation

**Relevant skills**
A breakdown of which skills the user has which are relevant to a occupation

**Learning opportunities**
Highlights the skill gap of the user for an occupation, and forms the basis for targeted upskilling and training
Skill profile: Resume

A visually appealing overview of all experiences and the main skills acquired during those

**Automatic generation**
Job seekers choose a design template and export their resume as PDF document in any of the 27 supported languages

**Application-ready resume**
Listing all experiences and skills, job seekers can include this document in any application
Skill profile: Occupation overview

A ranked list of occupations to which a job seeker’s skills match best

**Skill-based matching**

Based on their skill assessments, job seekers are matched to 2,942 occupations. All occupations are ranked by their skill match, and show any learning opportunities.

**Orientation in the labour market**

An ideal foundation for career advisors to propose new employment opportunities and educational pathways.
Skill profile: Skill match

A detailed analysis of how a job seeker’s skill set matches to a specific occupation

Detailed overview

At one glance, career advisors see all the skills a job seeker holds or needs to learn to pursue a specific occupation.

Personalized career advise

Career advisors get an ideal foundation to propose new employment opportunities and educational pathways.
Administration portal: Review user profiles

Detailed review of individual skill profiles for improved career services

Individual Skill Profiles
Review in detail any individual’s complete skill profile

Browse & Search
Search for specific skills and occupation matches

Generate Documentation
Automatically generate skill profile documents for the job seeker
Skill profile access

Job seekers and career advisors access the Skill Profile in four formats

Results

**Mobile Application**
Mobile application: Job seekers explore all results directly on their mobile phone

**Documents**
Skill profile can be exported as PDF, using different design templates

**Admin Portal**
Web interface that career advisors use to administer and monitor Skill Profiles

**API connection**
Skilllab’s skill assessment tool can be integrated into external systems via an API feed
AI Guided Skill Exploration

Apply GMP
Apply regulations regarding manufacture of food and food safety compliance. Employ food safety procedures based on Good Manufacturing Practices (GMP).

I used this skill:

- Never
- Rarely
- Occasionally
- Always
Why AI?

The benefits of using AI to capture competencies

Navigate Complexity
Quickly zero in on the relevant competencies among thousands

Aided Expression
Reduce the burden of self—expression by guiding the user to navigate their experiences and competencies

Exponential Improvement
Reduce the burden of self—expression by guiding the user to navigate their experiences and competencies
Benefits for marginalized job seekers

Uncovering one’s own hidden talents

Confidence

“I was embarrassed because I haven’t worked for the past few years while I was raising my children. But to see “Home Manager” on my resume and all the skills I gained was really exciting!”

Rasha, Syria

“At first I was too embarrassed to participate because I know I have no work experience, but now I feel confident because I believe that I have skills to offer.”

Anwar, Iraq

Help job seekers take ownership and control over their career planning

“I was really happy that I could comfortably express myself in my native language, knowing that employment services would see the results in Finnish.”

Abdallah, Syria

“After seeing the results, I feel encouraged to be more ambitious about my future. I have the feeling that I used to underestimate my abilities.”

Hiba, Iraq
Benefits for marginalized job seekers

A new way to explore one’s own skills and discover opportunities

Inspiration

“The application helped me to dust off skill from my past that I had even forgotten I even had.”

Taha, Sudan

“I’ve been in Amsterdam for four years now. If I had this application when I arrived, it would have saved so much time and effort to plan my future here.

Jalal, Yemen

“Before using the app, I really struggled to capture and express the skills I got in my past jobs here in Greece.”

Moses, Gambia

“I was completely surprised that I am not too far from being a 3D animator which could be a great option if I can’t find work as a game developer”

Regis, Brazil
Benefits for marginalized job seekers

Taking ownership over the job-placement process

Empowerment

Help job seekers take ownership and control over their career planning

“This application is the best application I used in this context. It will help me hold employment services accountable for better career support.”

Ahmed, Syria

“Employment services only ask us about our certificates. They never ask us what we can actually do. I think the skill profile covers the gap of information that our counsellors badly need.”

Majed, Palestine

“For the first time I feel that I have a plan that I created myself and want to follow. I know what I want to reach.”

Abeer, Iraq

“Interviews with counsellors take a lot of time and effort and even reflect our abilities. I would recommend my friends to use this app rather than relying on their counsellor”

Mohammed, Iraq
Benefits for career service providers

Skilllab’s service improves the effectiveness and efficiency of employment and career services while empowering job seekers

**Process efficiency**
More time for personalised career advice, as job seekers use app autonomously before consultations.

“We have seen other tools but this is much more sophisticated and detailed. It gives a much more granular sense of a client’s skills”

**Better outcomes**
Access all Skill Profiles at any time in the Admin Portal and achieve a higher success rate in job placement.

“We had a waiting list of one month for consultations. We can’t process people quickly enough and provide personalized service. This tool would help us do that.”

Career Counsellor, Blue Refugee Center Thessaloniki, Greece

Greater Detail
A better sense for a person’s capabilities helps to provide more personalized career services

“I’ve never had clients so excited to meet and discuss the next steps in their careers with me before doing this skill assessment”

-Fadma, Case worker City of Amsterdam
Partnering for inclusion

Skilllab

Software licensing, training, support

Local implementation partner

Distribution & user support

Skill Profiling

Licenses
Get as many user licenses for the skill assessment mobile app and admin portal as you need

Support
Book additional workshops, webinars, trainings and remote support to get the most out of the product

Branding
Get as many user licenses for the skill assessment mobile app and admin portal as you need

Customisation
Add additional language support, special data hosting requirements, integration with your IT systems, etc.
Pilots performed

Skilllab already successfully performed pilots with cities and organisations across Europe.
Want to learn more?

We partner directly with CDA to meet your needs

**Schedule a demo**
See in detail how our application works

**Test it out**
Have us set up a test account for you to try the application in real life

**Schedule a discussion**
Describe your ideas and programs and inquire whether our application could be useful to you and how
JobKred

Gary Gan, Co-founder
Using AI for Job Matching

Gary Gan
Co-Founder and CEO, JobKred, Singapore
gary@jobkred.com, +65 9792 4393

World Bank S4YE Webinar, 20 Feb 2020, Thur, 9.30 – 11.00 am
“The most significant investments that people, firms, and governments can make in the changing nature of work are in enhancing human capital.”
Changing Talent Landscape
More pronounced changes to ensue in the new decade

START OF THE DECADE

72% of Education Providers Believe That Their Graduates are Ready For Work But Less Than Half of Students and Employers Agree

END OF THE DECADE

3 in 4 Singaporeans say they weren’t taught enough skills to excel at work – and millennials feel the worst prepared

THE NEXT DECADE

By 2030, two billion youth worldwide will lack skills to participate in the workforce
Slow and unfocused HR planning

**COMPANIES**

**SKILLS SUPPLY**
4 years of formal training

**SKILLS DEMAND**
4 years of data collection

**WORKFORCE**

**SKILLS TRAINING**
4 years of curriculum development

**EDUCATION & TRAINING**
Current Methods of Skills Demand Assessment

Direct Industry Consultation
- Not standardized
- Slow
- Small sample
- Subjective

Surveys and Focus Groups
- Not skills-based
- Slow
- Expensive
- Outdated quickly

Skills Frameworks
- Not granular
- Slow
- Expensive
- Outdated quickly
Rethinking skills anticipation and planning
Big Data Analytics to decode **employer demand** and predict future skill requirements

Intelligent skill-gap analysis and personalised digital career guidance

Automatic mapping of curriculum to **granular skills** and **modular education** for youth and adults

**Fast, agile and targeted HR planning**

**JobKred**
Taking an AI-driven Approach
Embracing technology in HR Development

Traditional

- Analyse External Trends
- Understand Existing Workforce
- Execute Change

Repetitive Cycle With Short Relevance

Embracing Technology

- Digitised Competency Frameworks
- Employee Skills Profiling
- Matching Learning Needs to Skill-Gaps
- Building an Adaptive Learning Ecosystem

JobKred
Reinventing the future of workforce... with data-driven insights

Data Mining
Indexing data from multiple sources

Statistical Analysis
Data cleansing and relational extraction

Predictive Modelling
Customized model based on required context
In the ever-changing world of work, it is critical to ensure that the skills supply of the working population matches the skills demand of the industry.

The key challenges are to effectively identify current industry skills demand, then personalize training and career recommendations to each individual student or working adult, to help close skills gaps and land high quality jobs.

By adapting the best technology, experts, training providers and practices in Education and Workforce Transformation from Singapore, your country can ensure that your citizens are future-ready for Industry 4.0.

### Steps Taken for Transformation

|---------------------------|------------------------------|-----------------------|-----------------|----------------------------------------|-------------------|-----------|----------------------------------|

**Background of Workforce Transformation**

- **Millions of data points are sourced from online data to conduct job market analysis, allowing for fast analysis of skills demand, and benchmarking against other countries.**
- **Agile, adaptable skills frameworks are created, and these can be easily customised and contextualised to meet the requirements of each individual company.**
- **AI detects local skills requirements and dynamically recommends courses that match the skills requirements, allowing students to be market-ready.**
- **AI digital platform helps to train teachers across the country at scale, and ensures teachers obtain the necessary competencies.**
- **AI powered Digital Career Development Platform allows for individuals to discover their path to professional development and career success.**
- **Training providers both online and offline are curated to provide relevant training to close skills gaps and aggregated on the platform.**
- **AI platform aids individuals in securing meaningful employment by matching job openings with their career aspiration and the skill set that they possess.**
- **Industry workforce is transformed with a platform to guide employees in their skills and career development.**

**Innovation in Steps Taken**

- Agility, adaptable skills frameworks are created, and these can be easily customised and contextualised to meet the requirements of each individual company.
- AI detects local skills requirements and dynamically recommends courses that match the skills requirements, allowing students to be market-ready.
- AI digital platform helps to train teachers across the country at scale, and ensures teachers obtain the necessary competencies.
- AI powered Digital Career Development Platform allows for individuals to discover their path to professional development and career success.
- Training providers both online and offline are curated to provide relevant training to close skills gaps and aggregated on the platform.
- AI platform aids individuals in securing meaningful employment by matching job openings with their career aspiration and the skill set that they possess.
- Industry workforce is transformed with a platform to guide employees in their skills and career development.
Workforce Transformation Value Chain

- Essential to quickly and effectively match skills supply to skills demand
- AI can learn from real-time LMI to recommend careers, training and jobs
- Existing case studies from other countries already utilizing such technology
- AI technology can be utilized in both developing and developed nations
LMI SKILLS DEMAND RESEARCH

With the ever-changing future of work, new methodologies are needed to understand, in real-time, the skills demand of the country. Traditionally, surveys, interviews and focus groups would be conducted with stakeholders in the labour market, such as employers and industry associations. The results are then compiled into a report to inform policy makers. This normally takes years of work, and is a very expensive and tedious process for all parties involved.

CASE STUDY: MYANMAR LABOUR MARKET ANALYSIS

JobKred collaborated with JobNet, a Myanmarese job portal, for local data collection of key sectors and job titles for analysis. Data cleansing then took place in order to obtain most in-demand job roles and skills requirements in Myanmar, and they were mapped using JobKred’s taxonomies. Data analysis was then conducted to identify high-demand job titles and sectors, and to obtain changes and trends.

HOW IT WORKS

JobKred’s AI is trained by millions of data points from online data sources, user profiles, job postings, social media, government sources, etc. Using big data, data science and predictive analytics, data can be used to identify high-demand/high growth sectors and occupations, examine demand for key skills and benchmark local labour market intelligence against global labour market information. Over 20,000 data points were collected and cleaned up before information regarding employer demand for labour and and skills relevant to the job titles were obtained. Data was cleaned and processed into a report within a few weeks, rather than across multiple months in traditional labour market research.

PARTNERS

Consultancies such as EY and PwC can complement JobKred’s big data analysis with traditional surveys, focus groups and interviews, as well as conduct consultancy sessions with policy makers to make sense of the data.
Regional Market Insights – top 20 job titles by demand (for IT sector)

Source: ADB – JobKred – Bangladesh Research
Regional Market Insights – top 20 skills by demand (for IT sector)

Source: ADB – JobKred – Bangladesh Research
# Information Technology

## Job Demand by Industry

### Top 10 Skills for Software Engineer

<table>
<thead>
<tr>
<th>Rank</th>
<th>Skill</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Web Applications</td>
</tr>
<tr>
<td>02</td>
<td>Design</td>
</tr>
<tr>
<td>03</td>
<td>Software Development</td>
</tr>
<tr>
<td>04</td>
<td>SQL</td>
</tr>
<tr>
<td>05</td>
<td>Development</td>
</tr>
<tr>
<td>06</td>
<td>Applications</td>
</tr>
<tr>
<td>07</td>
<td>Software</td>
</tr>
<tr>
<td>08</td>
<td>Web Application Design</td>
</tr>
<tr>
<td>09</td>
<td>Knowledge Management</td>
</tr>
<tr>
<td>10</td>
<td>SQL Server</td>
</tr>
</tbody>
</table>

### Top 10 Skills for Web Developer

<table>
<thead>
<tr>
<th>Rank</th>
<th>Skill</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Java</td>
</tr>
<tr>
<td>02</td>
<td>PHP</td>
</tr>
<tr>
<td>03</td>
<td>Script</td>
</tr>
<tr>
<td>04</td>
<td>SQL</td>
</tr>
<tr>
<td>05</td>
<td>PHP Frameworks</td>
</tr>
<tr>
<td>06</td>
<td>Web Applications</td>
</tr>
<tr>
<td>07</td>
<td>CSS JavaScript</td>
</tr>
<tr>
<td>08</td>
<td>Product Knowledge</td>
</tr>
<tr>
<td>09</td>
<td>Web Application Design</td>
</tr>
<tr>
<td>10</td>
<td>Development</td>
</tr>
</tbody>
</table>

### Top 10 Skills for iOS Developer

<table>
<thead>
<tr>
<th>Rank</th>
<th>Skill</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Applications</td>
</tr>
<tr>
<td>02</td>
<td>GIS Applications</td>
</tr>
<tr>
<td>03</td>
<td>Design</td>
</tr>
<tr>
<td>04</td>
<td>Web Applications</td>
</tr>
<tr>
<td>05</td>
<td>Mobile Applications</td>
</tr>
<tr>
<td>06</td>
<td>Development</td>
</tr>
<tr>
<td>07</td>
<td>Mac OS</td>
</tr>
<tr>
<td>08</td>
<td>Always Willing to learn</td>
</tr>
<tr>
<td>09</td>
<td>Mobile Phone Apps</td>
</tr>
<tr>
<td>10</td>
<td>Mac OS X</td>
</tr>
</tbody>
</table>
Skills Frameworks are typically created by countries to guide the development of the industry or sector. Examples include USA’s Employability Skills Framework, Europe’s European Qualifications Framework, and Singapore’s Skills Framework. These frameworks would cover the type of jobs in the industry, the skills and competencies required, and even the definitions of jobs and skills, down to the proficiency level of each skill. Individuals can use the Skills Framework to make informed choices on career development and skills upgrading. Employers design progressive human resource practices to recognise skills and make informed decisions on skills investment. Training providers can develop industry-relevant programmes to respond quickly to employers’ and individuals’ needs.

**Case Study: Skills Futures SG**

In partnership with consultancies and industry associations, data was gathered quickly and easily from stakeholders, using JobKred’s AI engine. Global data was also instantly available from JobKred for overseas benchmarking. This data was used to quickly create, review and update Skills Frameworks, reducing the lag time to understand industry changes and requirements.

**How It Works**

- Global Data Collection
- Reference Skills Framework
- Own Data

**JobKred’s Value to Creation of Skills Frameworks**

Industry demands are constantly changing, and traditional methods of creating Skills Frameworks makes them obsolete the moment they are created. JobKred is able to provide the customisation and contextualisation of Skills Frameworks, benchmarked using Big Data Analytics against local and global standards. For countries without an existing Framework, JobKred can easily leverage on our experience working with Singapore government, and our global data, to help create Skills Frameworks localized to the country’s context, in a fraction of the time traditional methods take. This allow for faster transformation of the country.

**Partners**

JobKred can partner with consultancies like EY to create industry specific Skills Frameworks. EY has helped Singapore create half of their existing frameworks, and also utilizes JobKred’s data in their work.
With the awareness of local labour market skill and jobs requirements, countries will consider changes to their curriculum or even their educational courses to ensure that skills supply matches skills demand. Educational institutions may also discuss with local employers, to better ensure their curriculum matches their needs.

This process can take ten years or more, to understand local skills requirements, make changes to curriculum, implement these changes, and guide students and parents to understand these changes.

JobKred worked with a Technical Vocational Institute in Singapore to design a system to use JobKred’s global and local data to instantly understand skills demands, then map the schools curriculum to the skills requirements, and implement a recommendation engine to help recommend the right courses dynamically to students, based on local skills demand. This would cut down the lag time in pushing the right courses to students and ensure graduating students have market ready skills.

JobKred is able to change the status quo in the maintenance of curriculums for educational institutes, and ensure easy implementation of curriculum updates and course recommendations to students.

AI powers recommendations for careers, courses and micro-learning. Students can now craft their own personalised learning journey and ensure their skills match current labour market demands. For example, students will be able to select modules that are more relevant for them to pursue a certain career in the future.

For educational institutions who find that they do not have the necessary courses or cannot adopt the curriculum that the market needs, a temporary measure can be to provide courses from online providers, or bring in external training providers with the capabilities to deliver relevant courses to students. JobKred partners with global MOOCs like Udemy, Coursera, Udacity, or Singapore educational institutions like Singapore Polytechnic, to provide the right training the country needs.
Once the curriculum is adapted to suit the needs of students, the staff who teach the curriculum also have to be trained in order to deliver the curriculum effectively.

Countries may have to train thousands of teachers across a large geographical area, and ensure that training needs is done for each teacher, the right training interventions are pushed to the teacher, and track the competency and capabilities for all teachers. This is expensive and time consuming, thus curriculum changes tended to be slow to push out, and teachers slow to learn and adopt changes, leading to students not being able to benefit.

Using our AI workforce development platform, JobKred is able to help NUS modernize their entire competency and training framework for all 13,000 academic and non-academic staff. Implementation is also easy for the school, with the AI taking care of skills gap analysis, training recommendations and training delivery, so that the school could transform their workforce quickly, easily and at low cost.

JobKred is able to change the status quo in the maintenance of curriculums for educational institutes, and ensure easy implementation of curriculum updates and course recommendations to students.

AI powers recommendations for careers, courses and micro-learning. Students can now craft their own personalised learning journey and ensure their skills match current labour market demands. For example, students will be able to select modules that are more relevant for them to pursue a certain career in the future.
With the rapidly changing world of work, effective career guidance can help individuals understand where they fit in and what path to take. Singapore for example has two career guidance teams, one for students and one for working adults. Student guidance counsellors are attached to every secondary school all the way to tertiary level, and guide students on career choices and job seeking advice. Adult counsellors help the unemployed and those seeking to change careers. The challenge comes when the world of work moves too fast for human guidance counsellors to keep up, and also when there is a rapidly increasing need for guidance, leading to a lack of counsellors, and expensive programs to train and hire more counsellors.

**Case Study: National Technological University (NTU)**

National Technology University required a platform where 30,000 students would be able to explore career options and visualise the steps that they would need to take in order to work towards a career of their choice. A mentorship feature was also required so that the students could be attached to mentors in order to learn more about the industry they want to work in.

**How It Works**

JobKred's AI powered Digital Career Development Platform helps students and working professionals to discover their paths to professional development and career success. The system guides users to the right careers and identify skills gaps. Users will be empowered to build their personal profile articulate their skills through system recommended skill based vocabulary. The users’ skill sets are then analysed to recommend careers and highlight skill gaps in career recommendations. It empowers users in the discovery of new relevant career option.

90% of users said it helped them to better identify their skillset. 72% of users said it helped to them to discover more career options and discover more career transition pathways. 82% of users said it better helped them to identify their learning needs.

**Partners**

JobKred can work with Singapore’s National Career Development Association to train & Certify Career Coaches, so that there is a combination of technology to address career guidance needs at scale, but also trained and qualified human coaches to provide high-touch guidance.
For Mentors

Mentors are encouraged to assist their mentees in setting career goals, giving them the guidance needed to reach those goals and allow them to network effectively.

For Students

Students will identify their career goals and options, exploring various career recommendations that are personalised to them.
Training providers can be aggregated into one platform to help provide a catalogue of training courses for citizens to access. The problem comes when there are too many courses to select from, such that citizens do not know what courses are relevant for them.

### Case Study: My Skills Future

| **My Skills Future (My SF)** is a one-stop portal that enables Singaporeans of all ages to make informed learning and career choices, so that they can pursue their skills and career development throughout their lives. Individuals are able to discover a career path that is suitable for them, explore the various industries available and upskill themselves to find jobs. JobKred provides AI matching technology to My SF. |
| **How It Works** |
| ![Skills Gap Analysis](image1) ![Training Recommendations](image2) |

### JobKred’s Value to the Provision of Training

JobKred is able to aggregate data from our partners into an online platform and push out course recommendations relevant to the career choices that the user is interested in. It enables users to instantly identify skills gaps and close skills gaps through course recommendations. This allows for personalised training for all citizens. When users are able to visualise their skill gaps through our system and have a wide variety of courses at their finger tips, there feel more incentivized to embark on their own personal development, which allows for them to be able to aspire for the careers that they wish to take up in the future.

### Partners

JobKred has a ready platform, similar to My SF portal, to deliver skills gap analysis, course recommendations and training content nationally. JobKred has also partnered with a number of training providers, to offer a wide variety of courses that help individuals learn new skills, no matter what industry that may be working in currently.
Employers need a place to effectively reach out to talent such as students, graduates and current workforce, to inform them of their job openings and manage the applicants. Jobseekers need an easy place to receive job opening information and find the ones that match their skills and career aspirations. Government needs to track the data of matches in real time.

The challenge is doing the job posting and job matching at scale. Currently, Singapore has a national online jobs portal used by 200,000 citizens every week, and tens of thousands of employers.

**Case Study: MyCareersFuture**

MyCareersFuture.sg (MCF) is a portal that aims to provide Singapore Citizens with a free job search service that matches them to relevant jobs based on the jobseeker’s skills. MyCareersFuture.sg complements the Singaporean Government’s efforts to build an adaptable and competent workforce to prepare for careers of the future, based on skills and competencies. JobKred’s AI powers MCF with job matching.

**How It Works**

| Job Posting | Skills Analysis | Job Matching |

**JobKred’s Value to Employment**

JobKred is able to connect jobseeker to career opportunities that are relevant to their skills. Thus, this reduces potential job mismatches as jobseekers will be able to identify jobs that are best matches to the skills they have. This is made possible through JobKred’s job market analysis which is able to identify the skills required for certain job titles and map it back to the job seeking individual who possesses that skill.

The end product of job matching will be a workforce where individuals are able to find a job that matches their skill set well and employers are able to hire people who are the best fit for their company’s skill requirements.

**Partners**

JobKred can work with Trade Associations and Industry Associations from Singapore to help operationalize job matching systems in other countries and offer jobs in Singapore. JobKred already deploys specialized job matching portals for the ICT and Arts Sectors in Singapore.
The Future of Skills
A traditional talent development and skills strategy will no longer suffice. Future skill sets need to be personalised, versatile and transferable.

Learning Intervention
Organisations & nations need to find an efficient way to identify suitable learning interventions and enable employee and citizen access to these new skills quickly.

HR and Technology
HR must lead the way to be data driven and embrace technology tools to manage HR services, staff learning experiences and adopt an anticipatory approach towards capability building and lifelong learning.
About JobKred
Proven track record serving government and international organisations for skills upgrading

**GLOBAL**

- UNESCO
- ADB
- The World Bank

Labour Market Information Research
Online labour market data & skills demand analysis

**GOVERNMENT**

- my careers future.sg

Singapore’s National Jobs Portal
Personalised career and training and recommendations

**UNIVERSITIES**

- Nanyang Technological University

Student Career and Skills Guidance
Scalable personalised career guidance and skills gap analysis

**IMDA GREEN LANE**
Quality / Security assurance & compliance

**WHOLE-OF-GOVT PILOT**
MOM, MOE, IRAS, NEA

- World Bank, ADB
- UNESCO, NAC, SGTech

Enabler of workforce transformation

**Bangladesh**
Myanmar
Sri Lanka
Malawi

- 200,000 Weekly Users

- >33,000 Skills reported, 12,000 Careers favoured
Technology to integrate for effective and efficient implementation


Skills Frameworks and LMI Data

HRMS & LMS

ORACLE

workday. SAP

Staff's Data and Records

90% Cost & Time Savings for Talent Transformation

Talent Recommendations

Career Guidance Talent Allocation Succession Planning

Employer Workforce Transformation
Using Big Data and Artificial Intelligence, our proprietary software decodes the interdependent relationships among industries, careers, jobs and skills.

• Our technologies guide individuals to profile the portfolio of skills they have, and what they need to learn in order to work towards their desired careers.

• On a larger scale, we inform teams, organisations, industries and nations of their skill profiles to enable effective interventions in workforce development and talent management.
All copyright, trademarks and other intellectual property rights comprised in the information, text, graphics, data or other materials or works used on or contained in this document (collectively “the materials”) are the sole and exclusive property of JobKred Pte Ltd, Singapore.

No part of the Material may be reproduced, copied, reversed compiled, adapted, distributed, commercially exploited, displayed or transmitted in any manner or by any means or stored in any information retrieval system without the prior consent of JobKred Pte Ltd, Singapore.
Using AI for Job Matching

Gary Gan
Co-Founder and CEO, JobKred, Singapore
gary@jobkred.com, +65 9792 4393

World Bank S4YE Webinar, 20 Feb 2020, Thur, 9.30 – 11.00 am
Q&A Discussion

Using Artificial Intelligence for Job Matching Platforms
Thursday, February 20, 2020 | 9:30am – 11:00am EST | G8–090 & Webex