# Digital Workforce in Hong Kong

Acquire, grow and build tech talent





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# About this report

More than 1 million people in Hong Kong have a LinkedIn profile. This enormous dataset evolves in real-time, making it a powerful source of insight to any organisation strategising about the future of its workforce.

This report has crunched LinkedIn's unique data to identify the trends behind the most recruited tech jobs in Hong Kong.

We hope this report will serve as a valuable resource that  $\ensuremath{\mathsf{HR}}$  and  $\ensuremath{\mathsf{TA}}$  teams can use to:

- Gain insights into the tech trends shaping the Hong Kong job market
- Understand the range of skills different tech talent bring to the table, and how they can be leveraged by organisations
- Acquire, grow and build tech talent

The data from this report is as of 21st November 2018.



### Introduction

### The World Economic Forum's Future of Jobs Report 2018 says that over the next four years, the biggest boost to business growth will be the adoption of new technology.<sup>1</sup>

Other technological advances such as the growing availability of big data and advances in mobile internet, artificial intelligence and cloud technology will fuel business growth.

These top trends center on digital and new technologies and are contributing to the demand for tech talent and the different tech skills needed by organisations.

Opportunities for tech-skilled workers abound, with all industries looking to gain the competitive advantage technology can deliver.

#### TRENDS TO POSITIVELY IMPACT BUSINESS GROWTH UP TO 2022

Increasing adoption of new technology Increasing availability of big data

Advances in mobile Internet

Advances in artificial intelligence

Advances in cloud technology

Shifts in national economic growth

Expansion of affluence in developing economies

Expansion of education

Advances in new energy supplies & technologies

Expansion of the middle classes

Source: Future of Jobs Survey 2018, World Economic Forum.

In Hong Kong, there has been strong investment from the government to drive innovation and technology. The government's Innovation and Technology Venture fund, which launched in 2017, is one example. Endowed with HK\$2bn (US\$256m) the government has committed to co-investing in eligible start-ups.<sup>2</sup>

This has fuelled the thriving start-up scene. In 2016, 5,000 people were employed by Hong Kong's 2,000 start-ups. In 2017, the number of start-ups grew by 16 per cent, while the number of employees they're hiring rose by more than 20 per cent.<sup>3</sup>

Today, the Shenzen-Hong Kong technology cluster is ranked by the Global Innovation Index 2018 as the world's second largest.<sup>4</sup>

G Running a start-up is like jumping off a cliff and trying to build a plane on the way down. That's the feeling



Peggy Choi Founder & CEO at Lyr

1. World Economic Forum: Future of Jobs Report 2018

- 2. Hong Kong Business: Hong Kong's Startup Scene Takes Off Amidst Strong Government Support
- 3. HKTDC Research: Innovation and Technology Industry in Hong Kong

<sup>4.</sup> HKTDC Research: Innovation and Technology Industry in Hong Kong

# 15 most recruited tech jobs

LinkedIn crunched its data to find the most recruited tech jobs in Hong Kong. It paints a picture of a diverse talent pool, that is rising up to meet the talent demands of the digital era.

The top 15 most recruited tech jobs in Hong Kong reflect four trends:

The rise of mobile



Emergence of hybrid tech talent



The demand for tech skills across all sectors



#### TOP 15 MOST RECRUITED TECH JOBS IN HONG KONG

DevOps Engineer		25.3x
Full Stack Engineer		23.5x
Front Office Developer		20.5x
Mobile Application Developer		20.4x
Back End Developer		17.5x
Android Developer		17.3x
Quantitive Developer		16.8x
iOS Developer		16.7x
Mobile Engineer		16.5x
Data Scientist		16.5x
Frontend Web Developer		14.6x
Frontend Developer		14.4x
Blockchain Developer		14.2x
DataEngineer		13.6x
0x 5x 10x 15x	20x 2	5x 30x

#### Demand

(compared to an average professional in Hong Kong)

# Top 4 tech trends in Hong Kong

As organisations increase and refine their digital offerings, they will be looking for different types of tech talent.

Understanding how talent is responding to different digital trends can help organisations zero in on the skills and roles they want to fill.

INKEDIN DIGITAL

# Trend 1 Mobile rules in Hong Kong

Hong Kong residents love their smartphones. The Nielsen Media Index found that in 2017, 97% of internet users were going online using their smartphones.<sup>5</sup>

The same data shows that most people are spending more than four hours on their phone each day. With all eyes on mobile screens, there is fastgrowing demand for sophisticated apps and mobile content to get a slice of the mobile pie. Between 2016 and 2017, growth in mobile ad spend rose 168%.<sup>6</sup> By 2022, mobile ad spend is projected to make up 82.6% of total ad spending.<sup>7</sup>

To capture the attention of these audiences, brands are adopting a "mobile first" approach. Advertising opportunities on mobiles are diverse - from search engine or mobile web banner ads, to in-app and in-game adverts. This requires a wide range of talent who can help deliver content regardless of the platform or code.

Mobile-specific tech talent ranges from developing new apps, to making existing apps more seamless - such as developing in-app purchases for e-commerce. Localising popular international apps, including translating them into traditional Chinese, is another way tech talent is supporting the local market. Analyzing the talent pool of most recruited titles associated with mobile, we identified the highest-volume and fastest-growing skills.

#### **Top Titles**

- Mobile application developer
- Android developer
- iOS developer
- Mobile engineer

### **Top skills**

- Android
- Java
- iOS Development
- PHP
- MySQL

### **Fastest growing skills**

- Docker Products
- React Native
- Kotlin
- SDLC
- Firebase

#### 5. Nielsen: Take-up of mobile first

- 6. Marketing Interactive: Hong Kong's biggest ad-spending of the past year
- 7. Emarketer: Mobile ad spending in Hong Kong from 2017 2022



# Trend 2 Rise of the hybrids

Gone are the days when being a specialist in one skill was enough. Candidates today have realised the shelf life of their skills is limited and continually develop and broaden their skills set to stay competitive. This has given rise to a new breed of talent the hybrid workers.

The talent pool crunch makes hybrid talent very attractive to organizations who are looking for people who are able to manage end-to-end processes. A hybrid skill set could also indicate to an employer that this kind of talent might be open to learning, reskilling and upskilling as per the constantly changing directions of the business.

8. Puppet: What is a DevOps engineer

DevOps engineers are a perfect example of these hybrid workers. They typically have deep engineering knowledge, but hands on experience as well. They are able to use a variety of open source technologies and link them together with code, while also knowing how to test and deploy new tools and code.<sup>8</sup>

The full stack engineer, perhaps best thought of as the Swiss Army knife of the engineering world, is another indemand hybrid role. In Hong Kong, this is the second most recruited tech role as organisations rush to fill their ranks with multi-skilled engineering professionals.

Their versatility means they are in hot demand across a huge swathe of industries looking to add tech capabilities as efficiently as possible.

Demand for DevOps engineers and full stack engineers reflects the evolution of software and digital innovation.

They also illustrate how some hard tech skills, combined with problem solving, business development, project management and data analysis can deliver digital wins for organisations.

DevOps engineers make sure software is functional for all platforms and systems, making them high in demand in both Hong Kong's start-up and mobile scene. Startups learn through trial and error, and a good DevOps engineer can help improve the quality of the service. Likewise, a full stack engineer can see a project from start to finish - helping develop the back end and the front end.<sup>9</sup>

The rise of the multidisciplinary worker, who can wield their hard skills to develop the product, but also communicate and manage projects, is a key theme when it comes to digitisation.

### THIS HYBRID SKILLS TREND IS INCREASINGLY LEADING TO NEW ROLES AND TITLES:

### DevOps

#### Development + Operations

Can automate and monitor software integration, testing, deployment and infrastructure changes.

### Full Stack Engineer

#### Front-end + Middleware + Back-end

Possess specialised knowledge of all stages of software development.





### DevOps

### **Top skills**

- Software Development
- DevOps
- Linux
- Python
- Amazon Web Services

### **Fastest growing skills**

- Jenkins
- XML
- Microsoft SQL Server
- Zabbix
- CentOS

### Full stack engineer

### **Top skills**

- JavaScript
- Web Development
- PHP
- Node.js
- MySQL

### **Fastest growing skills**

- Mobile application development
- Vue.js
- TypeScript
- Express.js
- Swift



# Trend 3 Tech jobs are busting out of their silos

Tech is breaking out of its silo. As more and more businesses shift focus and resources to big data and digital products, leaders across all industries are looking at technology to drive scale, efficiency and growth. As such, tech talent find themselves in massive demand.

The diversity in Hong Kong's start-up scene demonstrates how new technology is being adopted across industries. Start-ups have major research focuses on information and communication technologies (ICT), software as a service (SaaS), Internet of things (IoT), data analytics, biotech, artificial intelligence (AI), robotics, virtual reality (VR) and augmented reality (AR).

While these are tech-centric areas, the application of this emerging new technology is across industries. Traditional industries are also ramping up their tech hires.

10. LinkedIn: The Digital Workforce of the Future Report

Organisations from a wide range of industries, ranging from telecommunications and entertainment to logistics, are all looking to harness the power of tech.

The financial services in particular see huge value in emerging tech development and engineer jobs, as banks and financial services become increasingly digital and automated.



80% of industries saw growth in digital skilled hires made as a proportion of total hires.<sup>10</sup>

#### TOP INDUSTRIES HIRING TECH TALENT AND GROWTH

\*Top 10 industries with the most professionals, listed in order of 1y percentage growth.

These are the industries experiencing the biggest growth in demand for tech talent.

Logistics and Supply chain	100%
Financial service	52%
Retail	52%
Banking	27%
Telecommunications	20%
Design	13%
Entertainment	11%
<b>Consumer electronics</b>	6%
Information technology and services	3%
Internet	3%

Percentage growth

Traditional industry like ours need to innovate and propel digital transformation, and professional online branding plays an important role in elevating the company brand and maintaining our position as an industry leader.



Craig S. Smith President & Managing Director, Asia Pacific at Marriott International

When recruiting for digital jobs we look at candidates even if they do not have keywords such as "digital" or "transformation" in their professional experience. We are always keen at candidates who have experience in change management or project, and system implementation or enhancement... Digital skills can be acquired and fine-tuned, we favour candidates who share our belief and passion in growing a customer-centric and "people first" business.

As we continue on our digital journey and drive business transformation, the demand for talents with digital skill sets will continue to grow. However, soft skills such as empathy, creativity and judgement, which machines cannot replace or replicate, will continue to be just as critical in the future.



#### Kerry Rooks

Chief Human Resources Officer, Prudential Hong Kong



# Trend 4 Data drives smart business decisions

Business is now driven by data. Whether it's financial or customer insights, companies are looking to people who can make sense of data to boost value and drive growth.

Big data is now well established as a key part of the decision-making process in the modern digital economy. The exponential increase in the availability of data, as well as the ease in sharing and storing it, is ushering in the era of data-intensive computing.<sup>11</sup>

As one of the world's top three financial centres<sup>12</sup>, it's not surprising that data scientists are one of the top tech jobs in Hong Kong.

With masses of consumer and internal business data, data scientists help banks and financial services drill into their data to glean insights and get ahead of the curve.<sup>13</sup>

13. efinancial careers: Recruiters in Singapore and HK say these eight tech skills could soon save your banking career

Organisations looking for data scientists don't necessarily need to compete in the crowded talent market. In-house training on how to collate, interpret and discover actionable insights from data can help upskill your data analyst to a data scientist.

A good data scientist won't just see the patterns of past data - they'll imagine the 'what if' before the competitor does. A combination of analytics and machine learning will help drill into the data and deliver predictions.

Analyzing the Data Scientist and Data Engineer talent pool, we identified the highest-volume and fastest-growing skills.

<sup>11.</sup> Forbes: Why data scientists are crucial for ai transformation

<sup>12.</sup> Investopedia: Top three financial centres in the world

There was a time when if you needed a data scientist there were limited jobs and so the vacancies got filled. Now every organisation needs data scientists. Law firms are an example.



#### **Anthony Saicito**

Worldwide vice-president for public sector education, Microsoft

Analyzing the Data Scientist and Data Engineer talent pool, we identified the highest-volume and fastest-growing skills.

### Data Scientist

#### **Top skills**

- Data Science
- Python
- Data Analysis
- Data Mining
- Machine Learning

### **Fastest growing skills**

- Artificial Neural Networks
- Pandas (Software)
- Keras
- Neural Networks
- Deep Learning

### Data Engineer

### **Top skills**

- Python
- Data Mining
- SQL
- Java
- Machine Learning

### **Fastest growing skills**

- Deep Learning
- TensorFlow
- Microsoft SQL
- Tableau
- HTML5

# Conclusion

From LinkedIn's data, it is clear tech talent is increasingly multi-skilled, able to work across disciplines and is in-demand across sectors, not just tech organisations.

If global trends are anything to go by, demand for hard tech skills – particularly in data – is only going to increase. As is demand for mobile.

As start-ups uncover new technology, and different uses for it, hybrid skills will become more relevant.

Identifying the trends in your region and how they are shaping the skills of talent around you is key to staying ahead and understanding what your own workplace may soon be looking for.

The key to attracting the best people will be to focus on skills rather than their previous job titles. In-house training can help diversify the skill set of your in-house data scientist, or help further develop your software engineers into DevOps engineers or full stack engineers.

HR and TA would benefit from looking for aptitudes such as adaptability, resilience, and entrepreneurial skills, rather than cookie-cutter resumes filled with previous job titles.



# Final thoughts for HR and TA teams



### Know the skill, not just the job title

# Finding candidates, hybrids or multidisciplinary talent means looking beyond their current title and hiring for potential.

In this landscape, tech may dominate, but soft skills are vital to get the most from our digital world, whether it's understanding data, communicating clearly, or managing projects. It's about soft and hard skills: Foundational or adjacent hard skills are table stakes, but no matter how technical the role, it's the soft skills that will show you who is good versus great.

Leaders should recognise talent's role in digitisation, and encourage transformation. Upskilling and reskilling can be used to keep talent in-house and help promote an adaptable and responsive mindset across the organisation.

We invest lots of time and resources to build the bridging link between the soft skills and the hard skills. Instead of we are working at the same time on hard skills. It's very different because we can really-- it's not really hard but it's difficult to make a computer science genius to be a good storyteller.



Mark Chan Group Managing Director, CMRS

We offer programmes to our employees to enable them to develop new skills, such as coding. We also want to experiment and explore new ways of working. To become a leader and a trusted brand in the industry, we need to continually challenge ourselves in what we do and how we work.



#### Kerry Rooks

Chief Human Resources Officer, Prudential Hong Kong

# Final thoughts cont.



Intuition and experience are vital

### With a market this complex and fastmoving you need to keep your eyes on the latest data.

Knowing the trends shaping your world is key to understanding what your own workplace may soon be looking for. Invest in building talent intelligence capability that can identify gaps in the workforce, and create a vision for how to fill them.

Data and insights can be used to compare an organisation's workforce against the wider industry and competitors. It can also be used when hiring to fill gaps, to understand the talent market - including identifying where the talent is and the level of supply.

# 3 Get ready to compete

### It's about supply and demand, know your unique differentiators and articulate consistently through your employer brand.

As Hong Kong's economy diversifies from multinationals to include smaller and nimble start-ups, a new breed of talent is emerging. They are adaptable and flexible workers ready to jump onto the next project. Organisations will need to be competitive to attract this talent.

For some, the attraction of a multinational company is prestige in the brand, stability and security - while others might be lured by the growth potential, flexibility and experience on offer at a start-up. In this competitive environment, HR and TA need to consider how to retain and motivate this talent. Developing an organisation's employer brand and thinking about the unique experience the organisation offers is key to having a competitive edge in a crowded talent market.

# Talent Intelligence



### LinkedIn's vision is to create economic opportunity for every member of the global workforce. Executing on that vision begins with mapping the digital economy – or creating the world's first economic graph.

LinkedIn's Economic Graph is a digital representation of the global economy based on data generated from 590 million members, 50,000 skills, 30 million companies, more than 20 million open jobs, and 84,000 educational institutions. LinkedIn has created the world's largest talent marketplace where candidates and companies are interacting every single day. While 10 years ago we had a relatively small collection of profiles and some engagement, we now have a robust community where billions of interactions are taking place every day.

The insights generated from these billions of interactions can enable today's HR leaders to answer some of the most deep and complex questions raised by the CEO and senior business leaders. LinkedIn has created the world's largest talent marketplace where candidates and companies interact every day.



# About LinkedIn's **Economic Graph**

The Economic Graph is a digital representation of the global economy based on 590 million members, 50 thousand skills, 30 million companies, 20 million open jobs, and 84 thousand schools. In short: it's all the data on LinkedIn.

Through mapping every member, company, job, and school, we're able to spot trends like talent migration, hiring rates, and in-demand skills by region. These insights help us connect people to economic opportunity in new ways. And by partnering with governments and organizations around the world, we help them better connect people to opportunities.

See full article



### **590M MEMBERS**



### 50K SKILLS

### **30M COMPANIES**



### 20M OPEN JOBS



84K FDUCATIONAL INSTITUTIONS

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### Linked in Talent Solutions