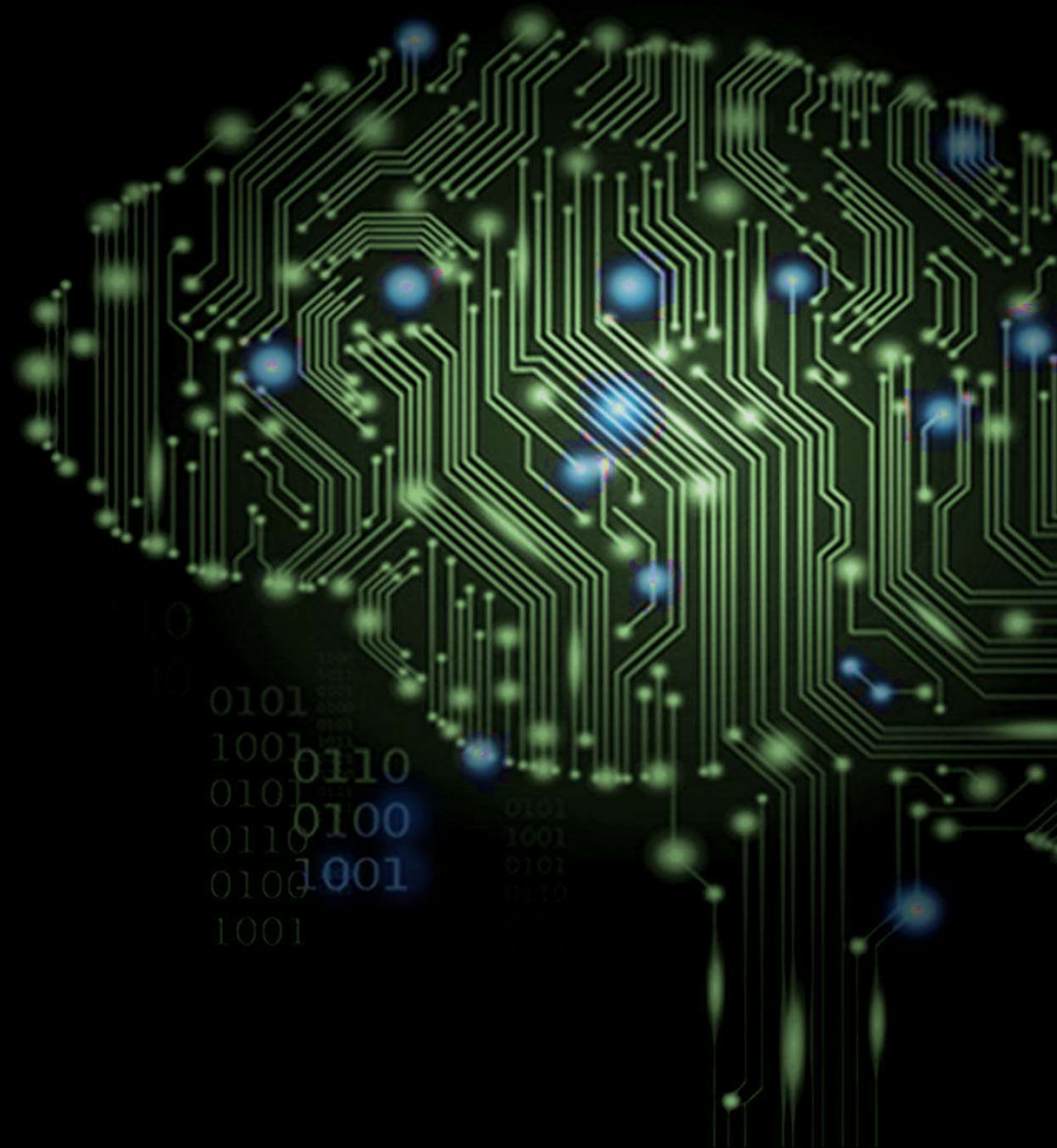


Who *Ow*ns AI



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PREFACE

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ARTIFICIAL INTELLIGENCE

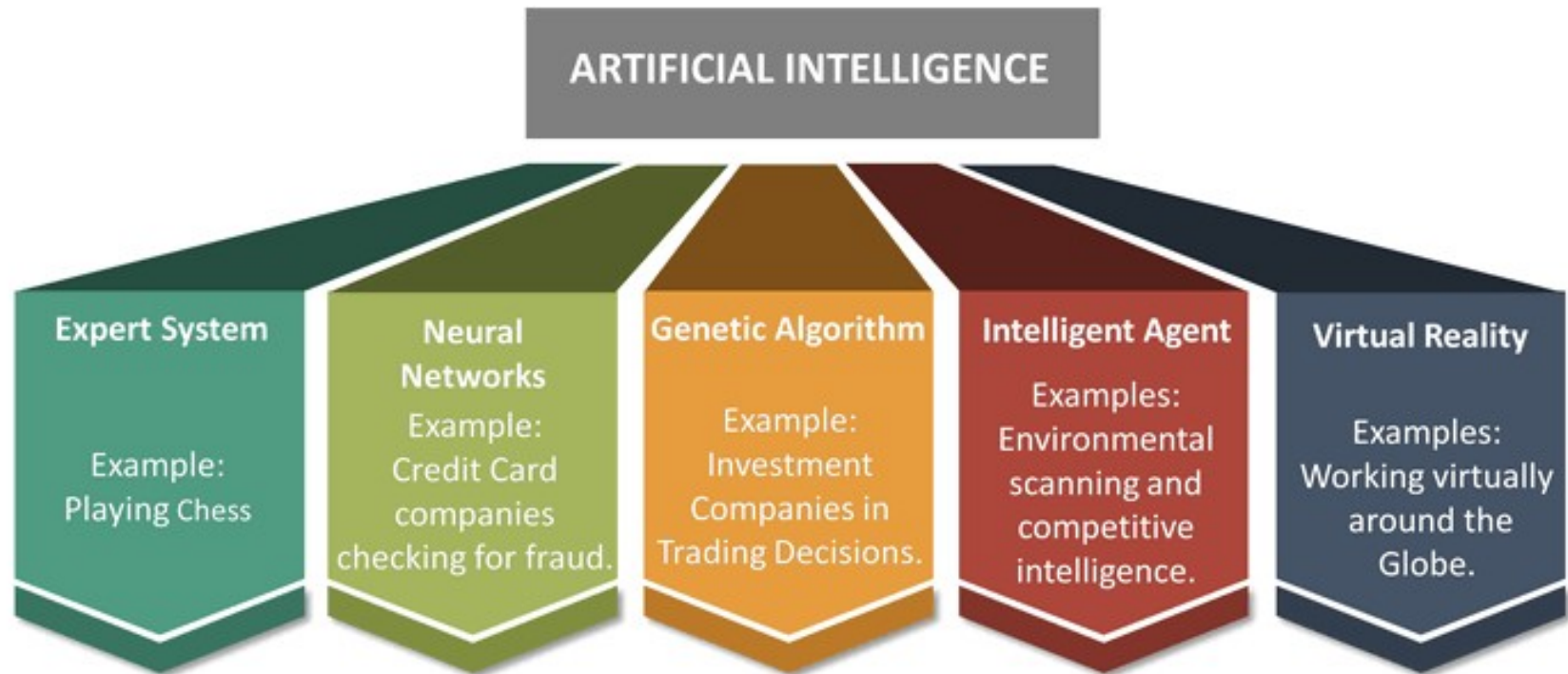
The term 'Artificial Intelligence' (AI) refers to those computer systems capable of performing tasks that would normally require some intelligence if done by humans

We interact with AI systems on a regular basis, for example in transport, e-mail, banking and social networking, and AI is fast becoming embedded into our everyday lives

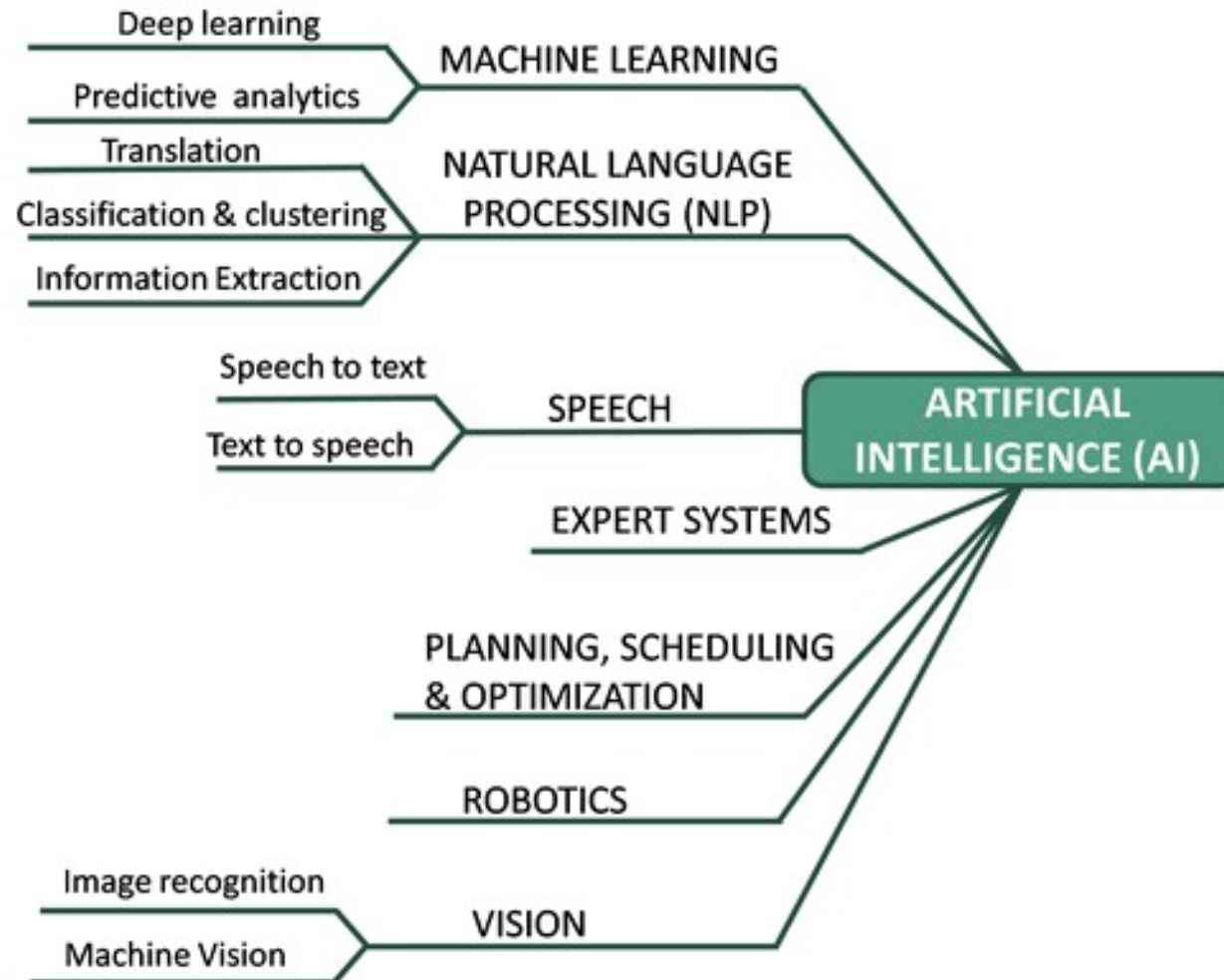
BRIEF ABOUT AI

- ❖ 1997: IBM supercomputer, *Deep Blue*, beats world chess champion Garry Kasparov
- ❖ 2002: First household robot is introduced – a *vacuum cleaner called Roomba*. Amazon uses automated systems to provide product recommendations
- ❖ 2008: Google introduces *speech recognition* in their app, pioneering a new approach using neural networks
- ❖ 2010: Microsoft *Xbox launches Kinect* to track human body movement in their video gaming devices
- ❖ 2011: Apple releases *Siri*. IBM Watson computer beats champions of TV game show Jeopardy
- ❖ 2012 to present: Increased investment in AI, e.g. in autonomous vehicles. Google's AlphaGo, created by London-based DeepMind, beats champion Go player.

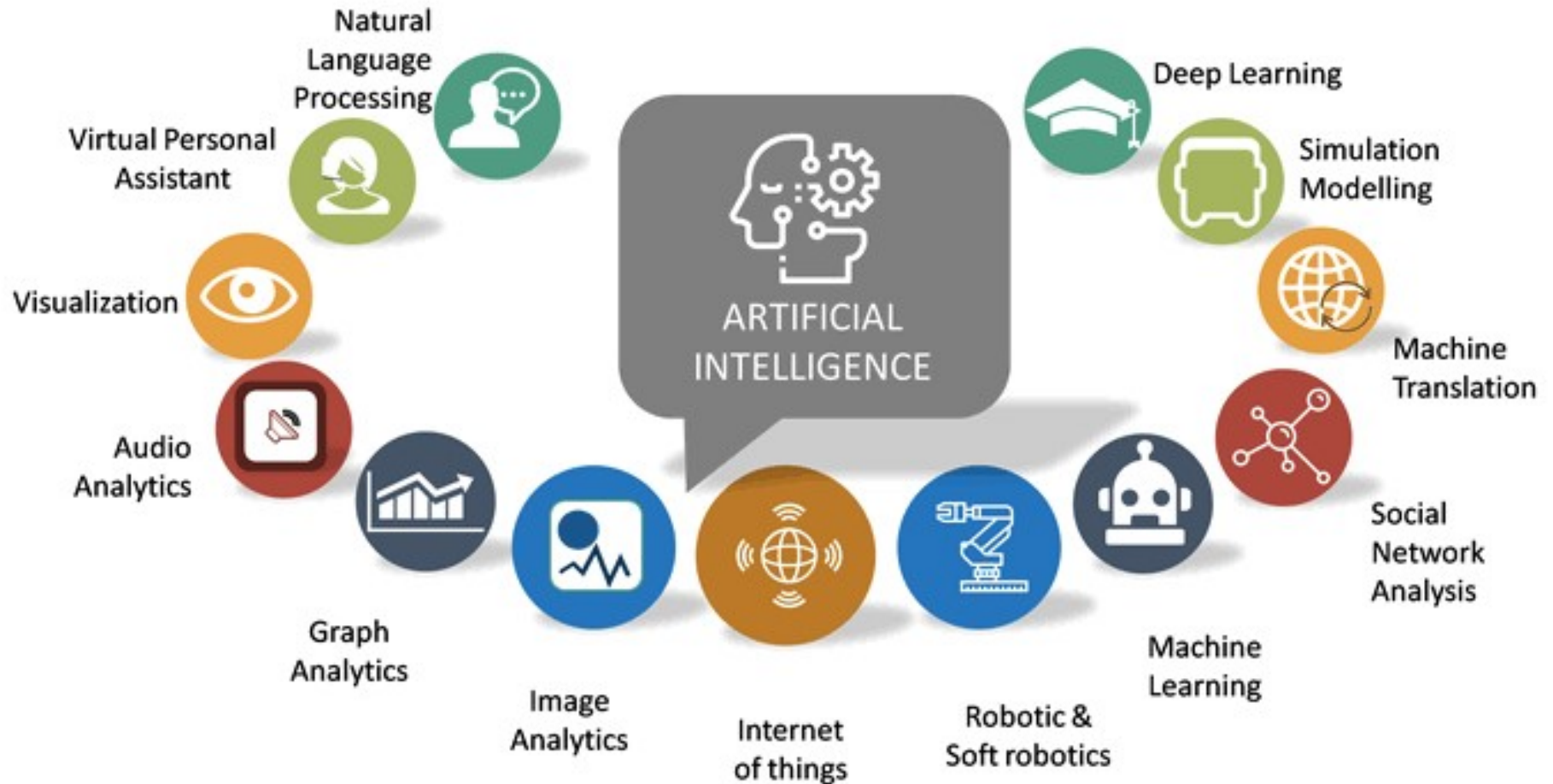
TYPES OF AI



AI - BUILDING BLOCKS



AI- POSSIBLE APPLICATIONS

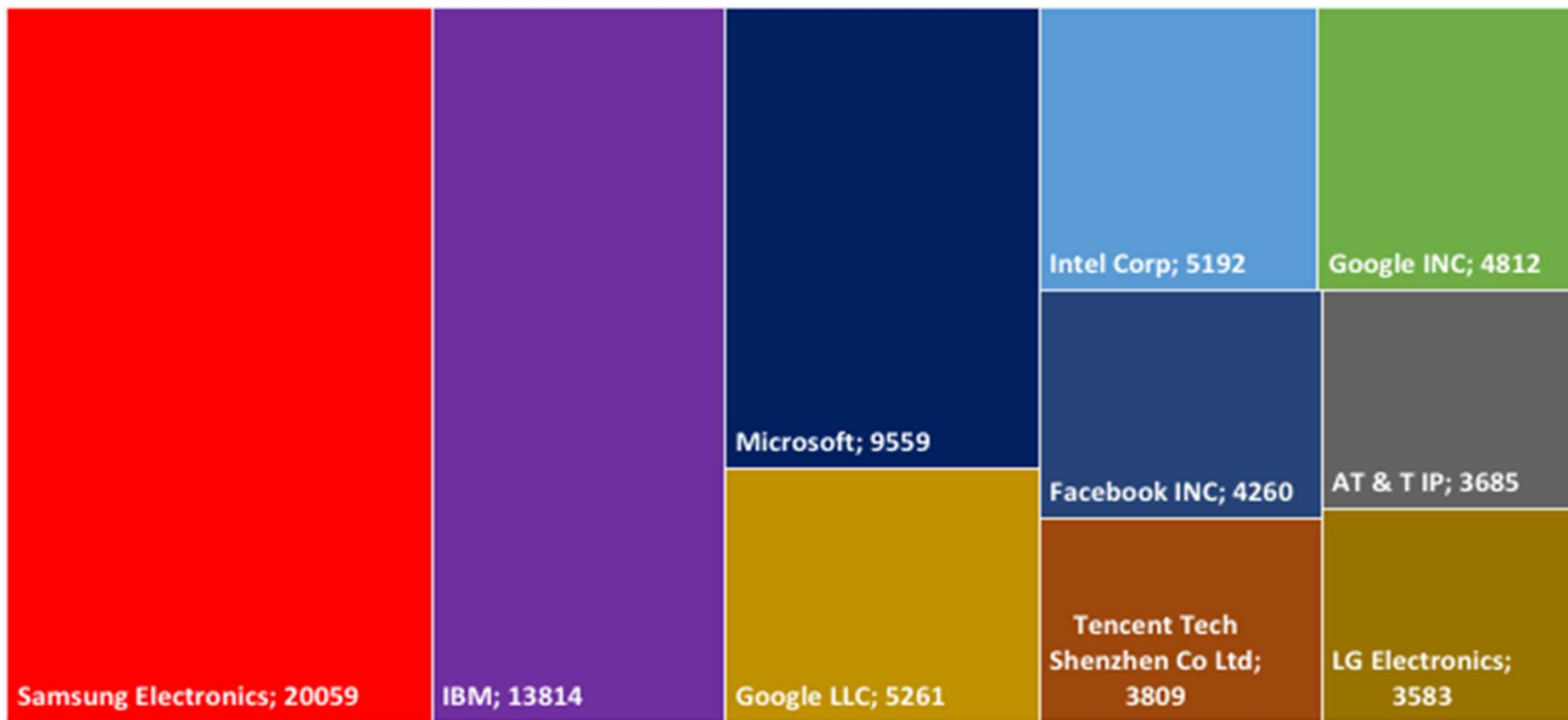


WHO OWNS AI

In this Patent Study, we aimed at

- Patent *Publication trends* for last 5 years i.e. 2015 – 2019
- *Who is Most active* in filing patents in the last 5 years
- Which are the *Jurisdictions competitors* are aiming at
- Which are *Potential Market Regions* for AI innovation
- Which are the Most *Active AI Functions*
- *Acquisitions* in AI space

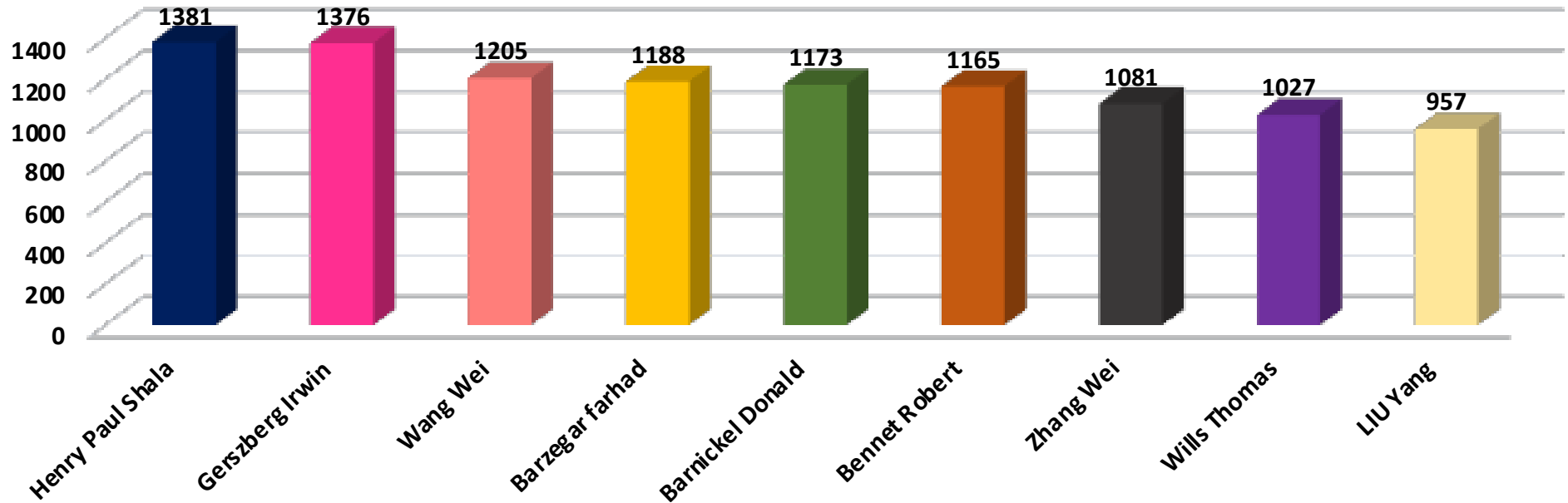
WHO OWNS AI



Samsung Electronics actively filing (last 5 years) patents in AI space followed by IBM and Microsoft

- ❖ Samsung has filed 45% more than its closet competitor IBM
- ❖ Compared to the top 10 players, as depicted above, Samsung has 27% of those records
- ❖ In the last 5 years, AT & T and LG electronics are filing patents vigorously in this domain

WHO OWNS AI - TOP INVENTOR

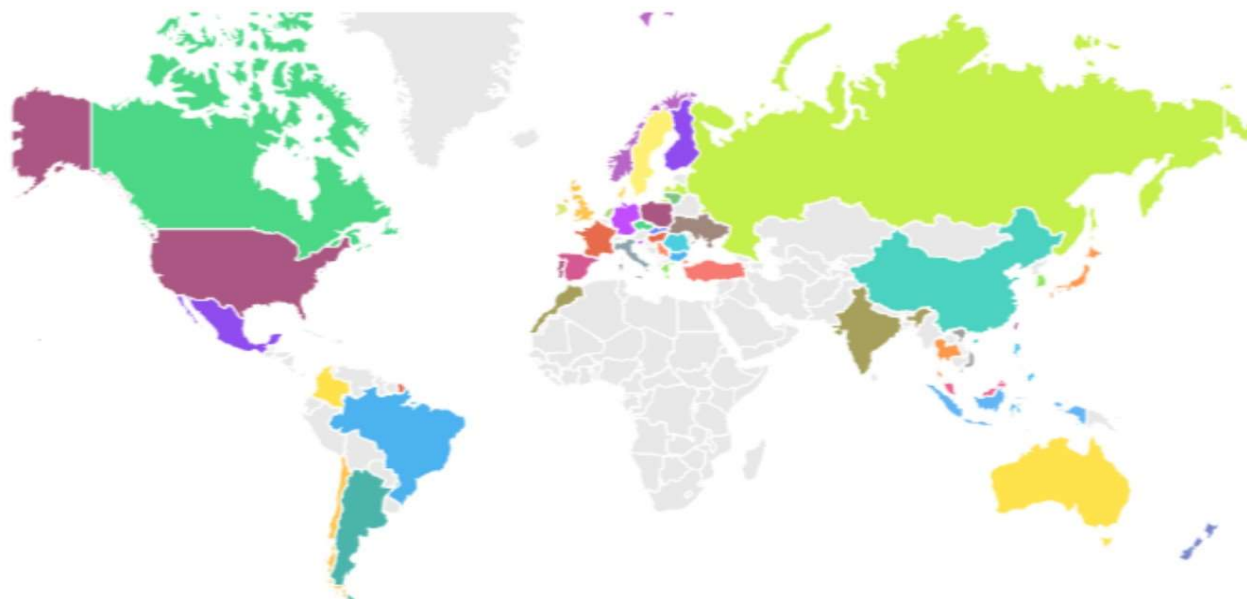


Henry Paul Shala seen as most active inventor (last 5 years) in AI space followed by Gerszberg Irwin and Wang Wei

COUNTRY WISE - PATENT FILING

Top countries/regions

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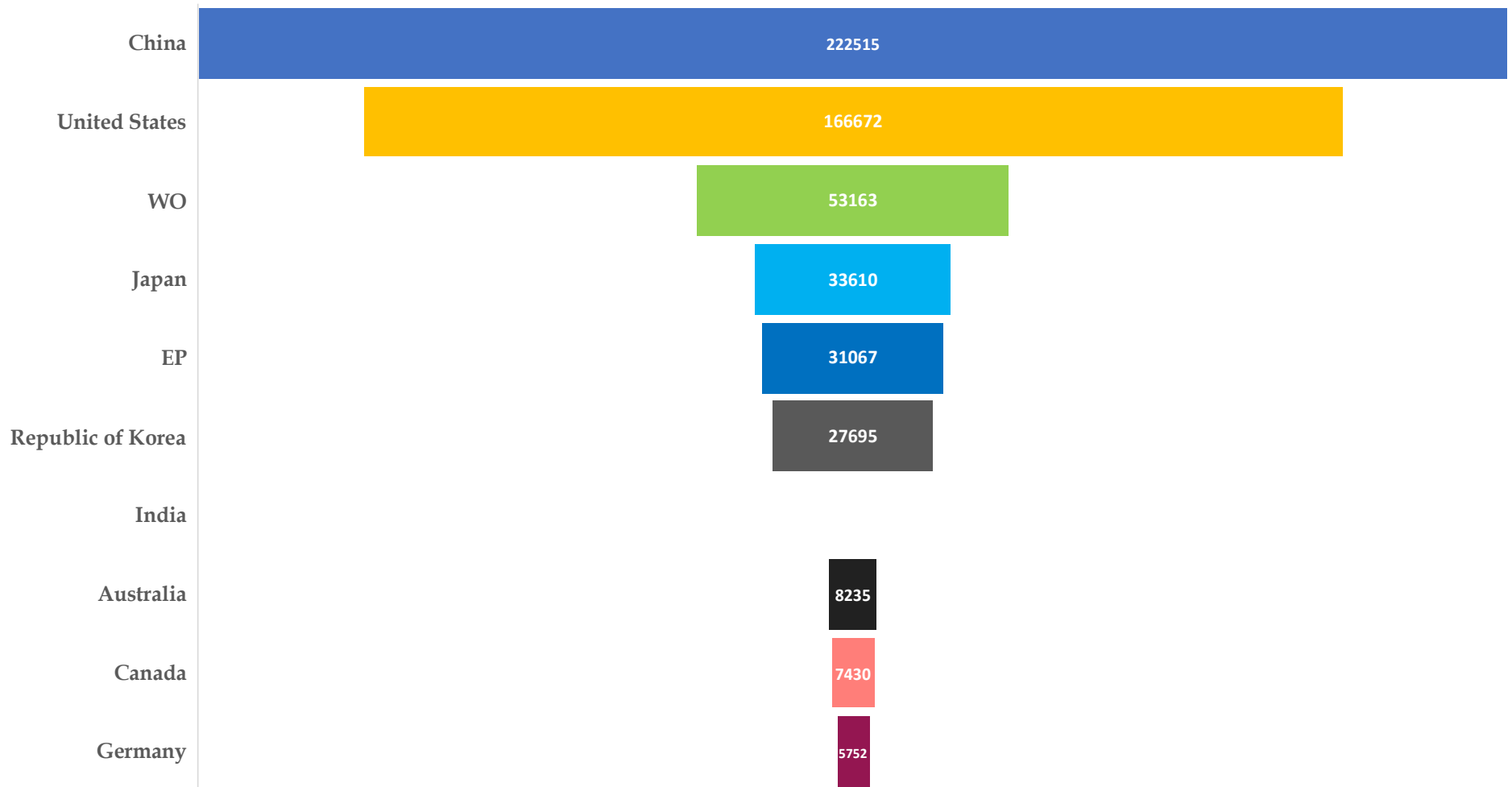


1. Australia(8235)	5. Germany(5752)	9. United States(166672)
2. Canada(7430)	6. India(9560)	10. WO(53163)
3. China(222515)	7. Japan(33610)	
4. EP(31067)	8. Korea, Republic of(27695)	

China dominates in terms of patent filings and it has become a potential competitor for US and Europe

- ❖ Japan, Korea and India seen actively filing patent in AI space
- ❖ This patent filing indicates most of the countries has focussed R&D on AI innovations and started filing patents in multiple countries

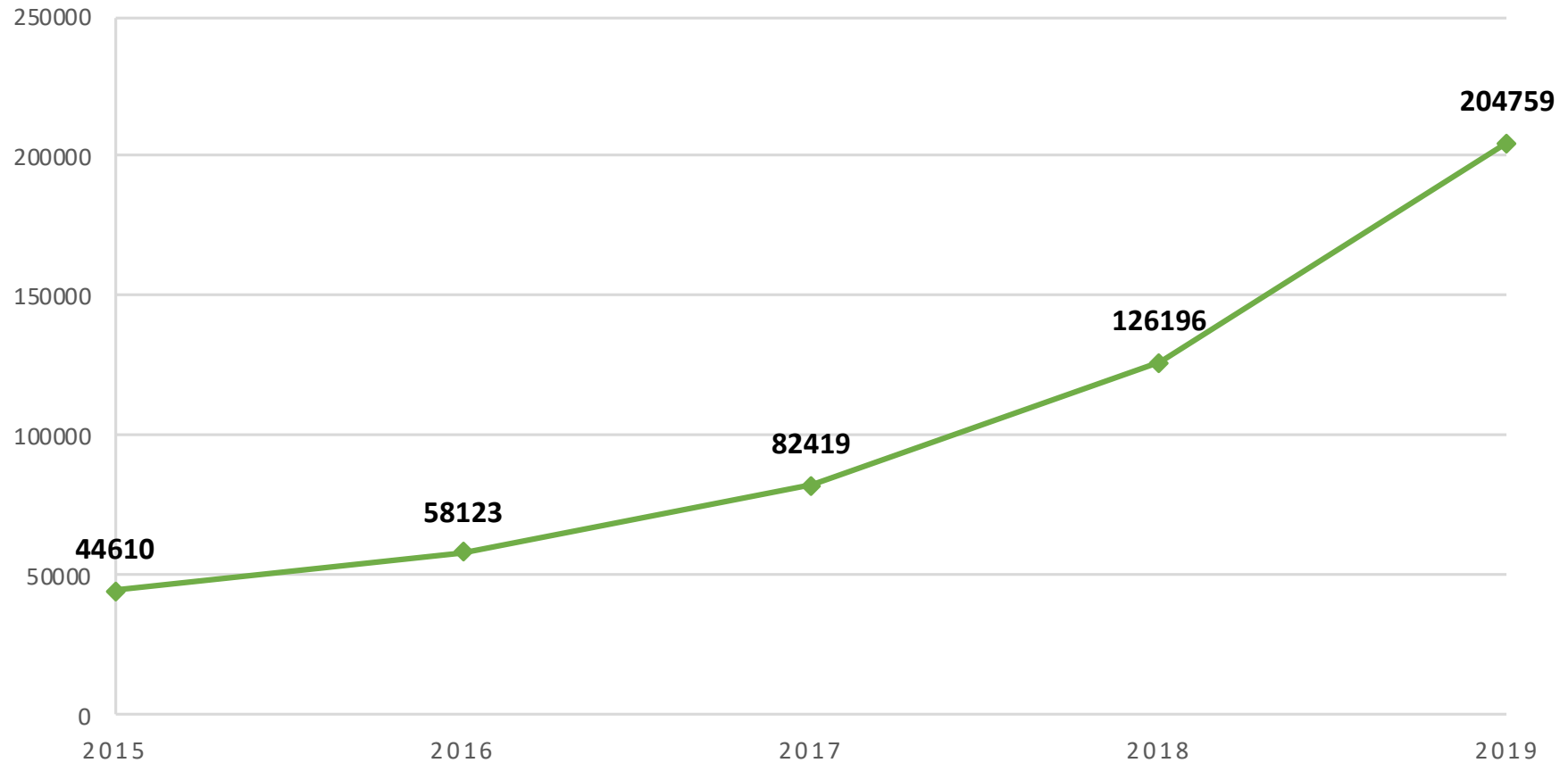
COUNTRY WISE - PATENT FILING



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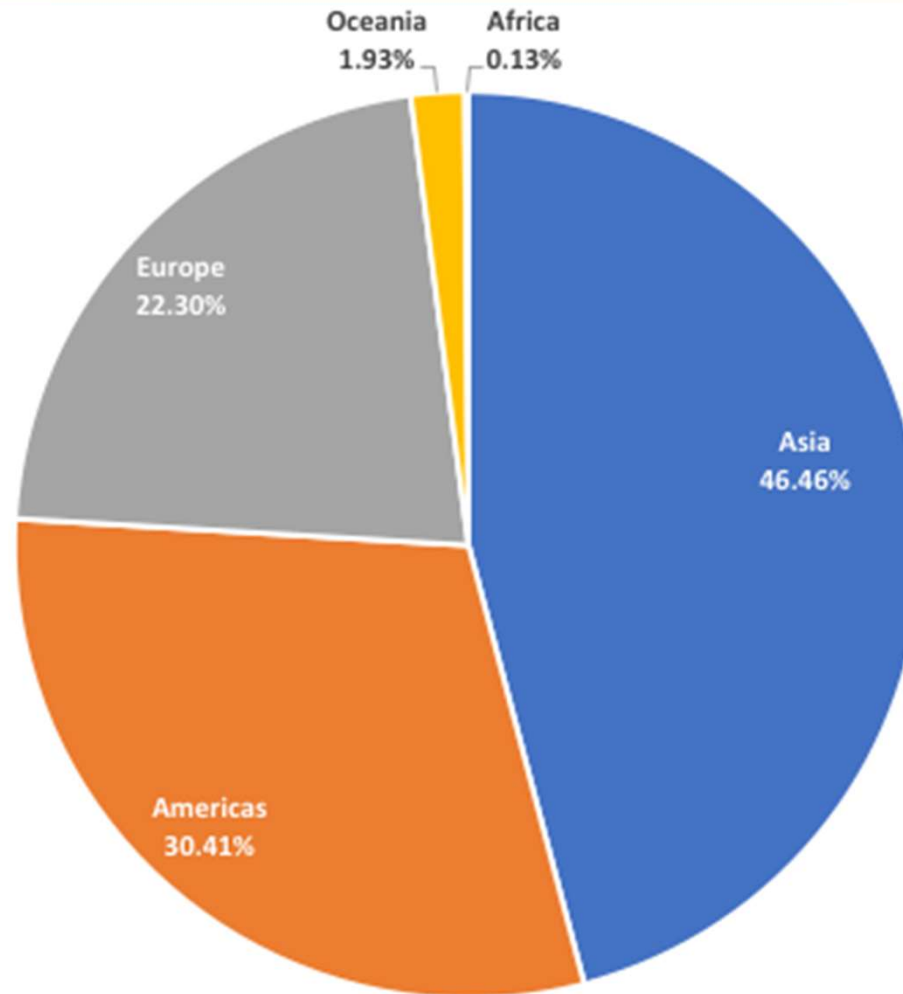
PUBLICATION TREND



Study growth been observed in Number of Patent publications from 2015 to 2019

- ❖ This trends indicates most of the competitors realized importance of AI and started owning the AI technology by filing more number of patents

MARKET FOR AI INNOVATION



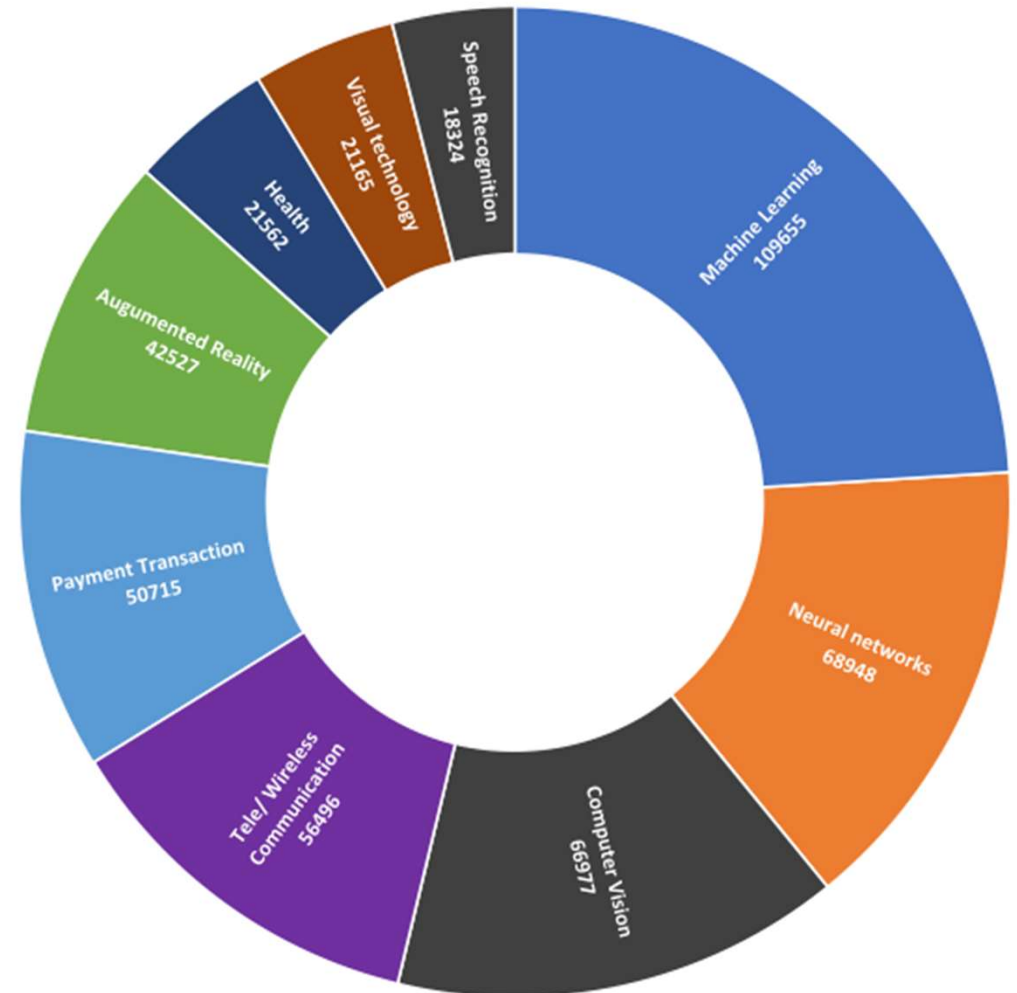
Asia appears to be the potential market where most of the AI innovations have filed IP

- ❖ America and Europe followed Asia.
- ❖ Competitors protecting their innovations in Asia, America and European Markets, which demonstrates market potential in this space

TECHNOLOGY TRENDS

Machine Learning is the dominant AI Technique disclosed in patents

- ❖ Deep learning and Neural networks are the fastest growing AI techniques in terms of patent filings in the last 5 years
- ❖ Computer Vision and Wireless communication also seen potential growth
- ❖ AR, Health and Speech Recognition also seen some growth potential



AI - ACQUISITIONS

Ever since the AI started booming, every big corporate felt it's need and started focusing on acquiring the potential start-ups in AI space

- ❖ Number of acquisitions in AI space is getting *increased in every year*
- ❖ Big corporations across every sector, from retail to agriculture, are trying to *integrate machine learning into their products*. At the same time, there is an acute shortage of AI talent.
- ❖ *Tech giants* are leading in this AI acquisition spree
- ❖ *Facebook, Amazon, Microsoft, Google, & Apple* are very aggressive in acquiring AI start-ups in the last decade

AI - ACQUISITIONS

MICROSOFT

2016

A British smartphone app, *SwiftKey*, uses AI to predict words a user wants to write and was bought by Microsoft for **£174million** in 2016

GOOGLE

2014

DeepMind Technologies is a UK-based AI company, acquired by Google in 2014 for **£400 million**

TWITTER

2016

London-based AI start-up *Magic Pony Technology* was acquired by Twitter for **\$102million** in 2016

Please note:

There are many acquisitions happening/happened in AI space over the last decade. As this is a sample output, we are just providing a few.

AI - ACQUISITIONS

APPLE **2017**

Apple has bought **Israeli start-up RealFace**, a cybersecurity and machine learning firm specializing in facial recognition technology for an estimated **\$2 million** in 2017

McDonald **2019**

McDonald's has acquired the personalization company **Dynamic Yield** for an estimated **\$ 300 million**. Dynamic Yield works with different brands including e-commerce, travel, finance, and media

SALESFORCE **2018**

Salesforce has acquired **Datorama**, an AI-powered marketing Intelligence and Analytics company based in Israel for an estimated **\$800 Million**

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An exceptionally *Unique* experience tailored to you



Confidentiality



24 x 7 Availability



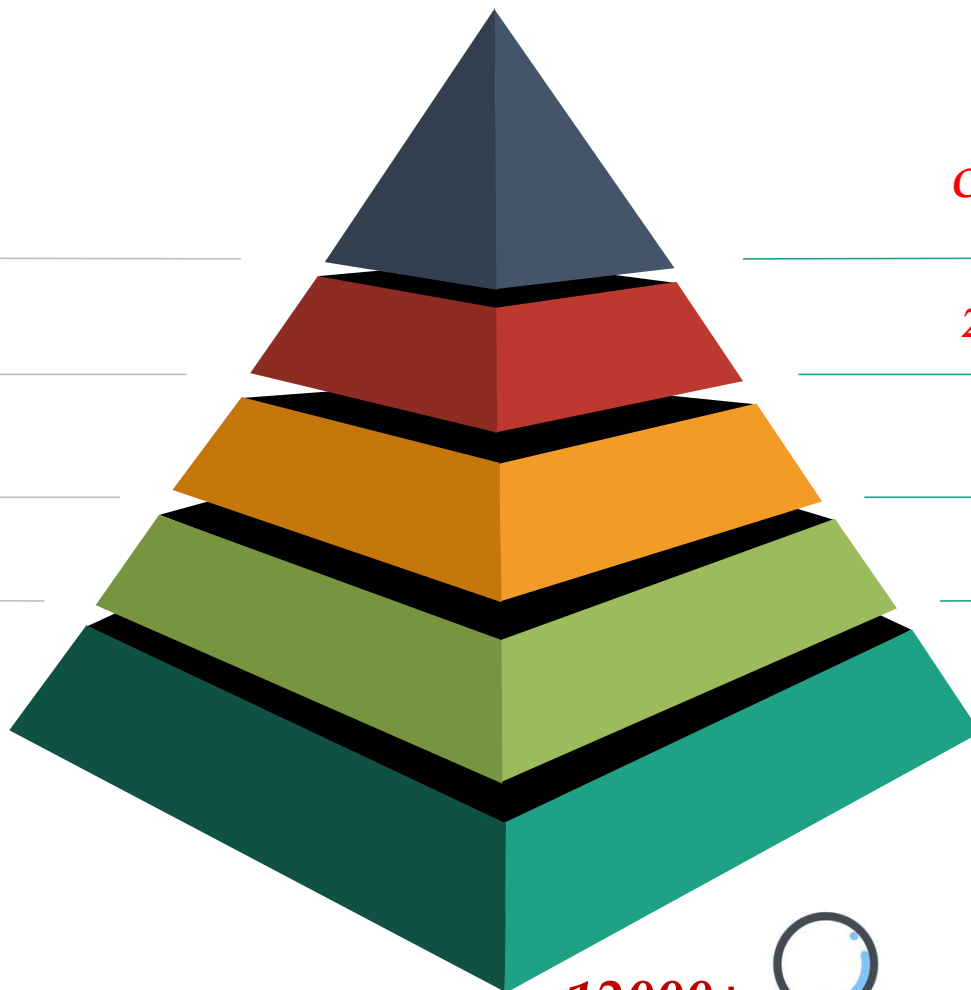
Timely Delivery



Proven Track Record



Industry Rich Experience



700+



Drafting; Filing & Office Action Response

12000+



Search & Analysis

183000+



Drawings

OUR CLIENTELE



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