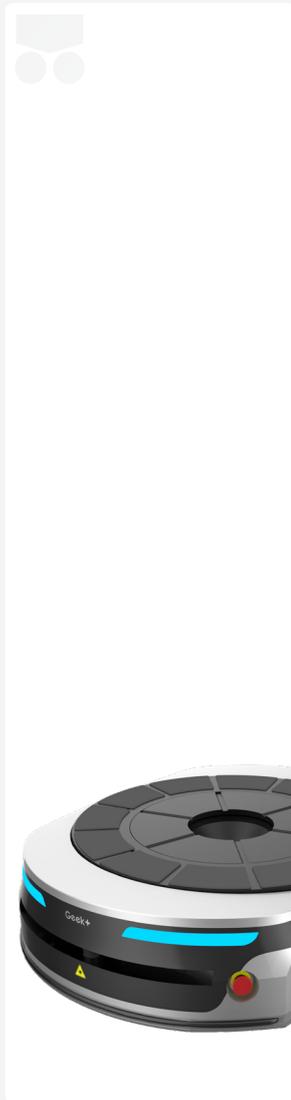Geek+

Moving the world intelligently

# Intelligent Robot Solutions for Logistics

# About Geek+:

D riven by Artificial Intelligence ("AI") and robotic technologies, Geek+ provides one-stop robotic solutions to enhance efficiency for users in the logistics field and warehouse management.  Largely perfecting the warehouse storage and simplifying order fulfillment, the techniques also bring a labor-free environment in terms of efficient parcel consolidation, effective inventory's management, accurate correlation of SKUs and optimized warehouse operation process.

In 5-year development path, over 200+ successful projects and 7000+ units of robots working in some well-known enterprises' warehouses. Geek+ has already been a leading provider in warehousing and logistic automation solution. Geek+ received UK Supply Chain Excellence Award in robotic innovative category in Oct 2018 and DELIVER Rising Star Award in June 2019  to mark our milestone.

# Distributor Network:

**USA**

**South America**
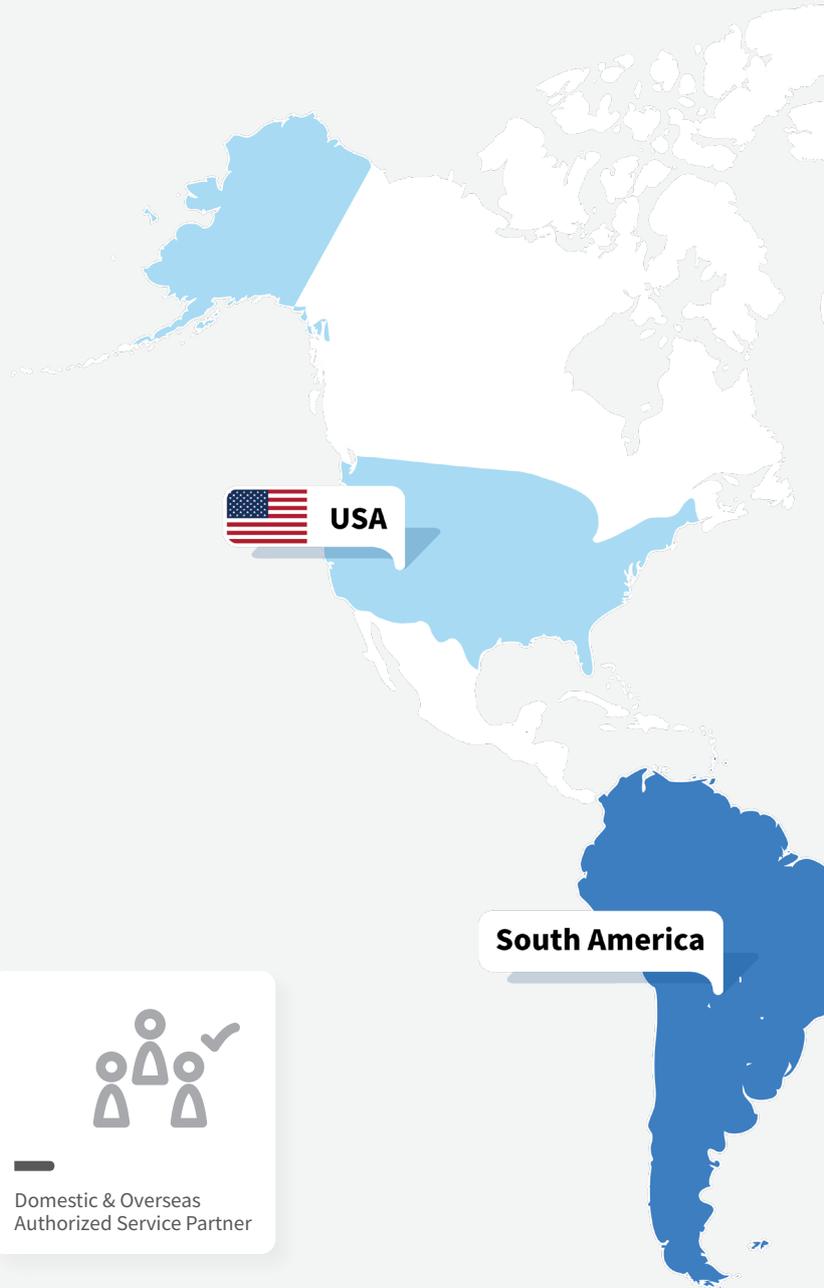
## Geek+ Cares

|  |  |
|---|---|
| 7 x 24 Hours | Cloud Based Service Desk |
| Multi-language Customer Interface | Geek+ Regional Service Center |
| Domestic & Overseas Authorized Service Partner | |

## Our Customers

| 天猫 TMALL.COM  HKTV mall  唯品会 vip.com | honestbee  MI 小米  苏宁易购 suning.com | 中国邮政 CHINA POST  EMS  SF EXPRESS 顺丰速运 | DKSH  国药 SINOPH |
|---|---|---|---|
| **E-Commerce** | **Retail** | **Express** | **Pharmaceut** |

Russia 🇷🇺

China 🇨🇳

Japan 🇯🇵

UK 🇬🇧

Germany 🇩🇪

Korea 🇰🇷

Spain 🇪🇸

Poland

Hong Kong

Thailand 🇹🇭

Taiwan

Singapore 🇸🇬

Malaysia 🇲🇾

Australia 🇦🇺

New Zealand 🇳🇿

药帮忙

BIRKENSTOCK 波司登 畅销全球72国 AlpenGroup

Yanfeng Automotive Trim Systems  DJI  国家电网公司 STATE GRID CORPORATION OF CHINA

acca  Empower  ALOG 心怡科技物流

...tical

Apparel

Manufacture

3PL

# Picking System



## "Goods To Person"  Picking

**Geek+ Picking System** realizes "Goods to person" picking by enabling robots to carry shelves, which breaks the traditional person to goods Law. It reduces travel path for workers and achieves fast, accurately and efficiently order delivery.

## Order Grouping & Multiple Picking

The robots are powered by machine learning algorithms which increase hit rate from storage to order and improve pick performance. Inventory analysis has always been accessible.
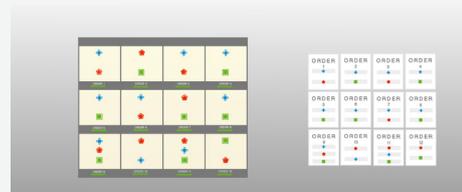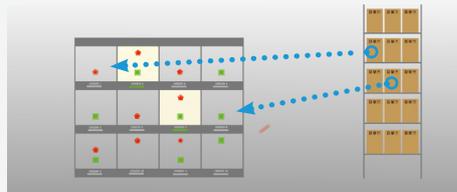


🔴 Sku 1   🟩 Sku 2

## Rapid ROI
2-3 years payback period

## No Single Point of Failure
High availability and keep 24 hour operation

## Artificial Intelligent
Flexible intelligent schedule

## Increased Accuracy
Accuracy up to 99.99%

## Improve Productivity
Triple labor picking rate

## Fast Deployment
1-3 months

**Empower**

## Case Study

With an aim of improving productivity and efficiency, Empower, a 3PL provider, deployed with 65 geek+ robots in a 8,000 m$^3$ warehouse to handle 20,000 daily orders. The picking rate is about 300-600 pcs per hour per workstation. It will bring a reduction of 30% in labor cost.

**Picking Rate**

| BEFORE | AFTER |
| --- | --- |
| 100 pcs/hr | 400 pcs/hr |

**Number of Workers**

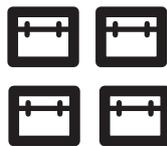| BEFORE | AFTER |
| --- | --- |
| 20 Pickers | 6 pickers |

**Storage Capacity**
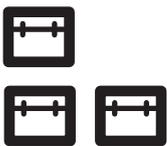
| BEFORE | AFTER |
| --- | --- |
| Fixed | Increase 30% |

# Moving System



**Moving Robot** leverages advanced SLAM laser navigation method to identify factory's environment and schedule the route independently. The robots are able to avoid the obstacle to deliver pallet / rack to the destination in a flexible and smooth way.

## 1 Pallet moving:

Robots carry pallet to achieve automatic material handling, which impoves production flexibility.

## 2 Flexible workbin moving:

Robots realize automatic moving and manual handling assisting for light loads with SLAM navigation.

## 3 Flexible roller joint:

Equipped conveyor, robots realize flexible roller joint to production line with SLAM navigation.



M100    Lifting    Roller    Human Machine Interaction    Multi functional Robot    Cage Trolley    M1000

# Benefits

**Flexible Module for Various Scenario**
Grippers, rollers, tools and special equipment

**PLC (Programmable Logic Controller )**
Integrate with all kinds of machinery systems

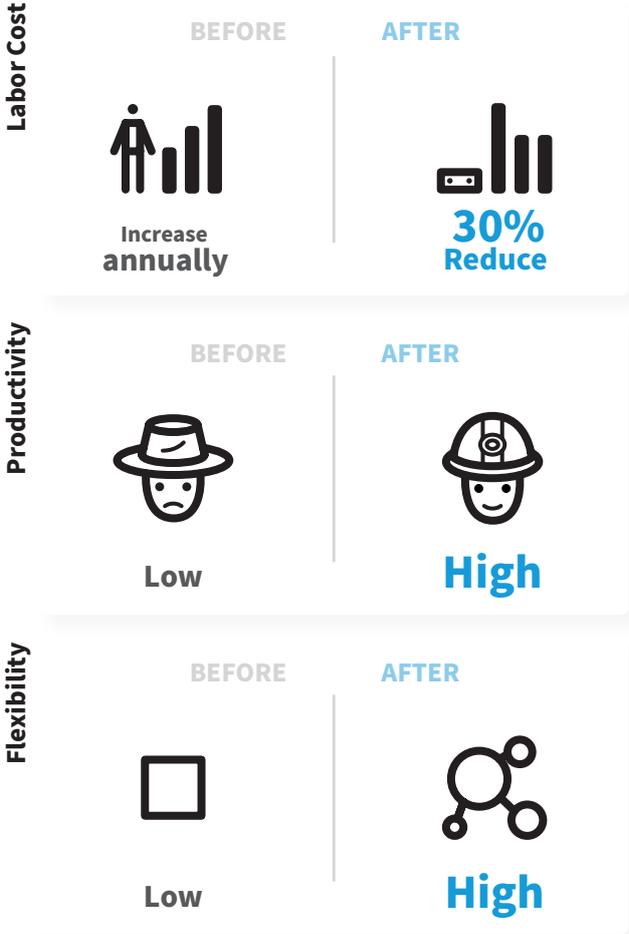**No Single Point of Failure**
High availability and keep 24 hour operation

**Secured Safety**
Multi-sensor infusion to minimize risk

**Artificial Intelligent**
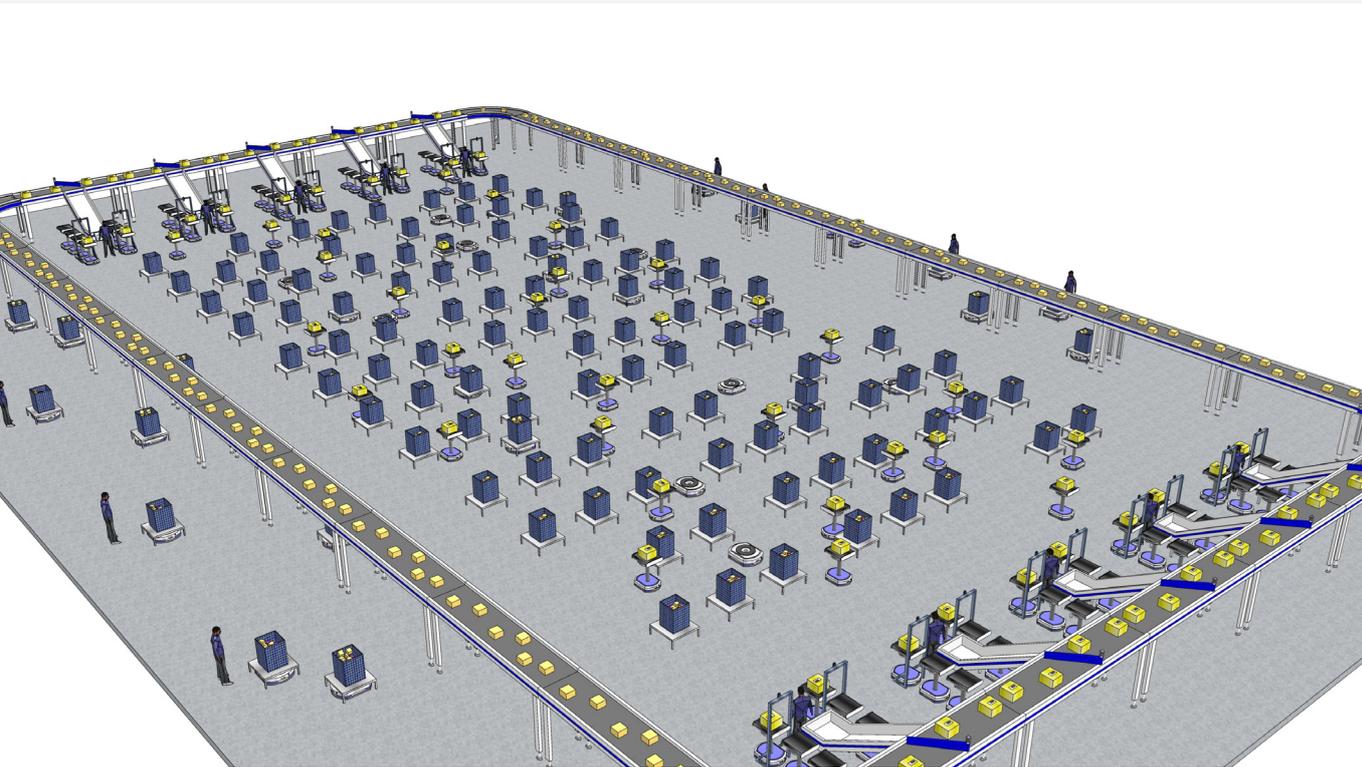Flexible intelligent schedule

## Case Study:

A manufacturer of unmanned aerial vehicles, DJI, deployed sets of M100 at 4200 $m^3$ warehouse. With SLAM technology, the robot moves freely at unmanned zone and the operation turns to full automatic warehouse.

**Labor Cost**

BEFORE

AFTER

Increase
**annually**

**30%**
**Reduce**

**Productivity**

BEFORE

AFTER

Low

**High**

**Flexibility**

BEFORE

AFTER

Low

**High**

# Sorting System



**Geek+ Sorting Robot** uses a strong AI algorithm and flexible system scheduling to figure out the most effective path and reduce convergence. The robot could do fast sorting automatically and send parcels to the corresponding shipment port.

**S20** sorting system is without steel platform. The robot uses QR code navigation, determine the direction of parcel by scanning QR code on parcel. Also, it has good flexibility and scalability.



S20C-H

S20T-H

# Benefits

**High Throughput**
Up to 10,000 – 12,000 pcs/hrs

**Rapid ROI**
Within 12 months payback period

**Lower Labor Cost**
80% labor saving

**Increased Accuracy**
Accuracy up to 99%

**Fast Implementation**
1-3 months

**Convenient Relocation**
Flexible layout

## Efficiency

| BEFORE | AFTER |
|--------|-------|
| 6k - 8k parcels / hr | 10k -15k parcels / hr |

## Cost

| BEFORE | AFTER |
|--------|-------|
| Increase annually | ROI within 1 year |

## Accuracy

| BEFORE | AFTER |
|--------|-------|
| 70 - 80% | 99% |

唯品会
vip.com

## Case Study:

In December 2017, VIP.com deployed 200 sorting robots for warehouse 24-hour operation. The sorting efficiency reached 10,000 parcels/hr and has successfully gone through Global Shopping Festivals such as Double-12, Lunar New Year, and other large-scale promotional activities, which has greatly improved the sorting efficiency of warehouse.

# Forklift

**Geek+ Automated Forklift** has realized self-driving through SLAM navigation and is capable of automated storage and retrieval. Its sensors can detect the measurement and position of the goods on the shelves, pinpoint the pallet slots accurately and carry the goods to the appointed area under the instruction from the scheduling system.

## Benefits

### Labor Reduction
Perform loading, unloading and moving pallets automatically

### Space Utilization
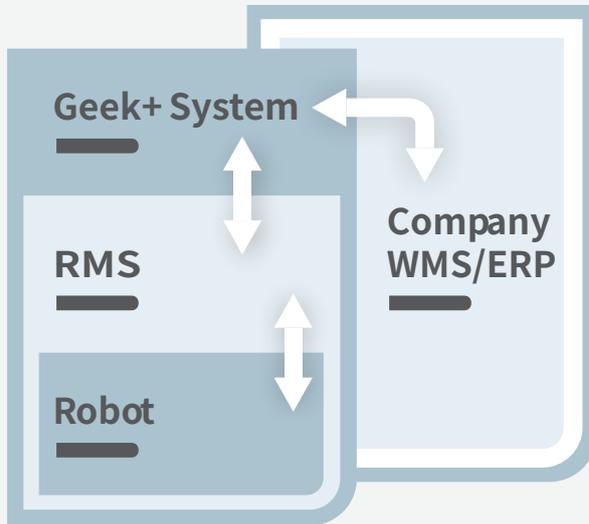Work in warehouses with narrow aisles, block storages, deep-lane stacking

### Low Risk and High Safety
Cater complex working environments

# Geek+ Artificial Intelligence

### Geek+ System

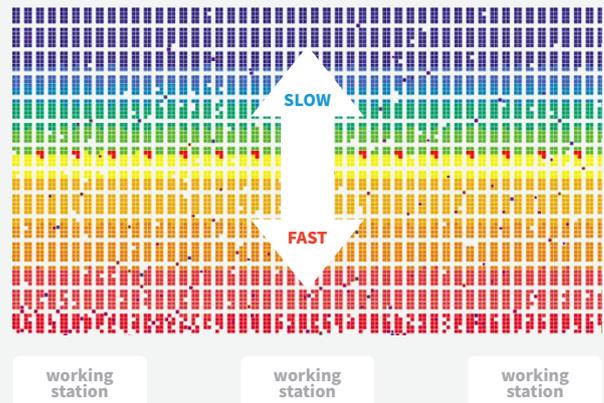### RMS

### Robot

### Company WMS/ERP

## Real-time Inventory Management

Integrating with various kind of WMS with Geek+ system simultaneously

## Artificial Intelligence Optimization Strategy

Dynamic storage and relocation of goods by frequency of purchase

SLOW

FAST

working station

working station

working station

# Customer Values

**Rapid ROI**
2 – 3 years payback period

**Boost Productivity**
Increase 300 to 700 picks/ hr
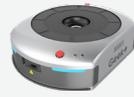
**Flexible & Scalable**
Scaled up or down easily
3 months implementation time

**Space Utilization**
Up to 30% space saving

# Parameter

| | P800 | P500 | M1000 | M100 | S20C-H |
|---|---|---|---|---|---|
| **Size & Weight** | | | | | |
| Weight | 180 kg | 130 kg | 200 kg | 68 kg | 75 kg |
| Payload | 1000 kg | 500 kg | 1000 kg | 200 kg | 20 kg |
| Length | 1040 mm | 920 mm | 1090 mm | 750 mm | 560 mm |
| Width | 820 mm | 690 mm | 830 mm | 500 mm | 600 mm |
| Height | 280 mm | 280 mm | 275 mm | 210 mm | 1027 mm |
| Drive Mode | Two-wheel differential drive | | | | |
| **Battery & Efficiency** | | | | | |
| Speed | 1.5 m/s | 1.5 m/s | 1.5 m/s | 1.5 m/s | 2.5 m/s |
| Lift Height | - | - | - | - | - |
| Charging Mode | Automatic charging, support user-defined | | | | |
| Operation Duration | 24 hours operation, support user-defined | | | | |
| Battery | Li-ion, 38.5 ah | Li-ion, 38.5 ah | Li-ion, 38.5 ah | Li-ion, 24.7 ah | Li-ion, 12 ah |
| **Safety & Navigation** | | | | | |
| Navigation | 2D bar code visual or others | 2D bar code visual or others | SLAM and 2D bar code visual | SLAM | 2D bar code visual |
| Obstacle Avoidance | Infrared laser/ ultrasonic(opt.) | Infrared laser/ ultrasonic(opt.) | 360° Laser radar | Laser radar | Laser radar and others |
| Control/ Stop Precision | < 10 mm | < 10 mm | < 20 mm | < 20 mm | ± 10 mm |
| Communication | WIFI/IEEE802.11 b/g | | | | |
| Emergency Switch | Available, switch at each side | | | | |
| Protection Grade | IP54 | IP54 | IP21 | IP43 | IP54 |

| | **S20T-H** | **F14L** | **F16L** |
|---|---|---|---|
| | 70 kg | 1200 kg | 1200 kg |
| | 8 kg | 1400 kg | 1600 kg |
| | 560 mm | 2300 mm | 2300 mm |
| | 510 mm | 950 mm | 950 mm |
| | 1335 mm | 2200 mm | 2200 mm |
| | Two- wheel differential drive | | |
| | 2.5 m/s | 1.5 m/s | 1.5 m/s |
| | - | 3010 mm*more | 3010 mm*more |
| | Automatic charging, support user-defined | | |
| | 24 hours operation, support user-defined | | |
| | Li-ion, 12 ah | Lead-acid/lithium | Lead-acid/lithium |
| | 2D bar code visual | SLAM or others | SLAM or others |
| | Laser radar and others | Laser radar, 3D camera and others | Laser radar, 3D camera and others |
| | ± 10 mm | ± 10 mm | ± 10 mm |
| | WIFI/IEEE802.11 b/g | | |
| | Available, switch at each side | | |
| | IP54 | - | - |

# Geek+

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