Instant Item Training: Practical AI for the Retail Industry

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Mashgin
Who We Are
Mashgin

- The fastest self-checkout system on earth, powered by computer vision
- Checkout in 5 seconds
- Works with packaged goods, produce, & plates
Which Line Do You Want to Be in?
Who We Serve

• 1000+ Locations
• 25+ Sports Stadiums
• 10+ Airports
• 120 Corporate Cafeterias
• 500 Convenience Stores
Sports Stadiums
Why Mashgin?
Business Benefits of Computer Vision to Our Customers

- 400% faster transactions
- 20-400% more sales
- Labor “upscaling”: Making existing labor more efficient and human centric
- 25% increase in basket
- 80% of customers say they prefer Mashgin
Practical AI Constraints In Retail

- Accuracy
- Speed
- Commodity Hardware
- Edge Compute
Instant Item Training: Critical For Operations

- Staff do not care about tech
- If new items cannot be added within seconds, they will not do it
- New item inventory arrives last minute, need to be ready for checkout within minutes
Technology Overview
3D Computer Vision + AI = 99.9% Accuracy

Multiple 3D Cameras → Color + Location → Deep Learning
3D Real-Time Mesh
We Can:

- Train new item system-wide in 1 minute
- Launch a new store in 15 minutes
- Handle complicated items and scenes with ease (different sized Red Bulls, occluded items, crowding etc.)
Examples Of Complicated Scenes

Kiosk 540
Circle K - 2703486

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pepsi 20oz</td>
<td>$1.75</td>
</tr>
<tr>
<td>Monster Energy Ultra Sun...</td>
<td>$2.95</td>
</tr>
<tr>
<td>Rockstar Recovery Orang...</td>
<td>$2.59</td>
</tr>
<tr>
<td>Smartwater 23.7oz</td>
<td>$2.36</td>
</tr>
<tr>
<td>Polar Pop Epic XI</td>
<td>$0.99</td>
</tr>
<tr>
<td>Fv Sausage Egg Chs Biscu</td>
<td>$2.00</td>
</tr>
<tr>
<td>Fvn Ham Cheese Croissant</td>
<td>$2.00</td>
</tr>
</tbody>
</table>

Sub-total: $20.39
Taxes: $0.77
TOTAL: $21.16

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Lessons Learned
Stick Around and Good Things Will Happen

- Resilience is key to success for most startups – Justin Kan, Co-Founder of Twitch
- “Do not run out of money” – The only advice that matters!
Think Long Term

- Resist investor pressure
- Acknowledge that computer vision is hard, it’s not normal SaaS
- Research problem vs. startup growth
- No shortcuts in hard tech
Magic Sauce

- 3D Computer Vision + Deep Learning
- Those two often do not talk to each other
- Be ready to do grunt work, not all computer vision is glamorous
Focus

• Do one thing well

• There is no one way to success
We Are Hiring

Jobs

jobs.lever.co/mashgin
mashgin.com/about