

What's Hot? The M&A and Funding Landscape for Embedded Vision Companies



Dr. Rudolph Burger May 2018

Questions Addressed

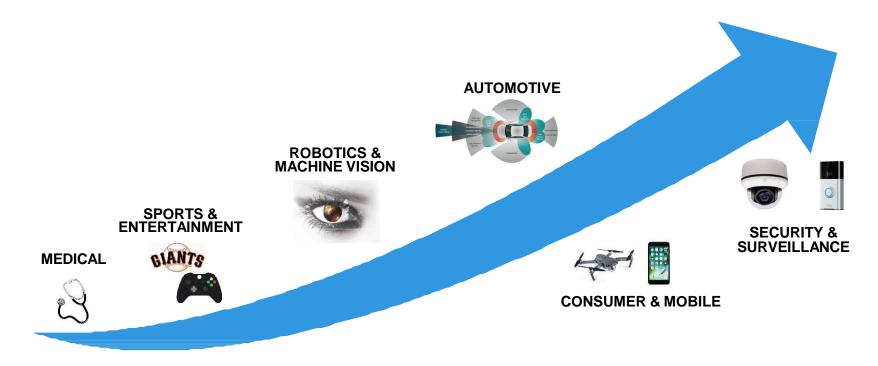


- 1. How have we segmented the embedded vision market and what are expected to be the highest growth segments?
- 2. Where are the VC dollars going and who are the most active investors? How does investment into embedded vision companies compare between US and China?
- 3. Which segments have seen the most M&A activity, what are the most notable recent acquisitions, and who are the most active acquirors?
- 4. Why are there so few embedded/computer vision unicorns?
- 5. What are the market trends for embedded vision in consumer markets?
- 6. What are the market trends for embedded vision in automotive markets?
- 7. What are the growth opportunities in these markets?



Application Markets for Computer Vision



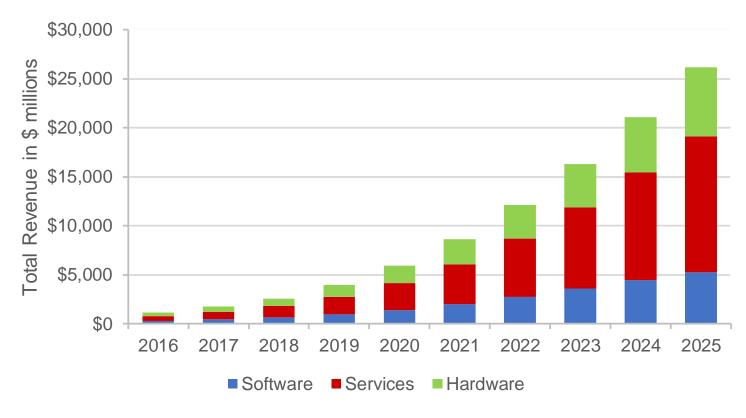


Over \$1B invested into US Computer Vision Companies over last 3 years



Computer Vision Total Revenue by Segment World Markets: 2016-2025



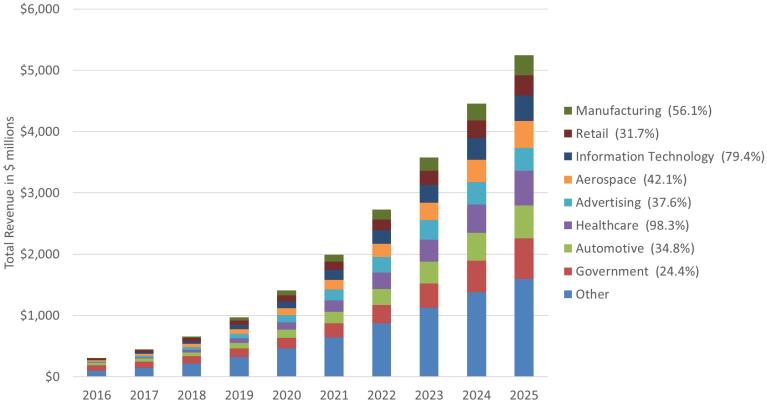






Computer Vision Software Revenue by Industry, World Markets: 2016-2025



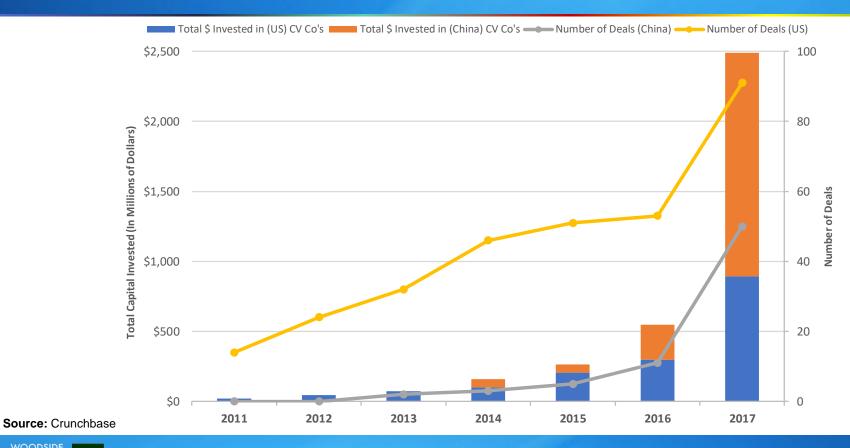




Source: Tractica

China vs US Investment in Vision Companies







Most Active Venture Investors



Company

Embedded Vision/Computer Vision Private Placements

ANDREESSEN HOROWITZ





February - 2018 \$42.0M





\$4.5M

October - 2017 NA



December - 2017 \$15.4M



January - 2018 \$5.0M



March - 2018 \$3.7M





October - 2017 \$668.2M



February - 2018 \$10.8M



March - 2018 \$40.0M





July - 2016

NA



September - 2017 \$668.2M



January - 2018 \$3.5M





January - 2018 \$25.64M

April - 2018 \$15.0M



Most Active Corporate Investors



Company

Embedded Vision/Computer Vision Private Placements





SENSORS | ANALYTICS

March - 2018 \$17.8M



March - 2018 \$15.0M



may mobility February - 2018 \$11.0M







LABORATORIES March - 2018 \$14.5M



March - 2018 \$963.0M



January - 2018 \$25.0M







February - 2018 \$75.1M



October – 2017 \$10.0M







\$19.0M

February - 2018 \$42.0M



咖 | 科 | 技 September - 2017 \$542.0M



VENTURE INVESTMENT





December - 2017 \$8.0M

September - 2017 \$11.0M



Top Public Company Acquirors



Company

Embedded Vision/Computer Vision M&A

Alphabet











March - 2013 NA

July - 2016 NA

Undecidable! October - 2016 NA





November - 2013 \$360.0M



January - 2016

NA

emotient

January - 2016 NA



REALFACE February - 2017 NA





May - 2005\$115.0M



July - 2008 \$3.0M



August-2016 \$2.4M



November - 2016 \$4.7M







April - 2012 \$31.0M



May - 2016NA



September - 2016 \$392.1M



September - 2017 \$15.300.0M



January - 2014 NA



September - 2014 NA



August - 2017 NA



Recent Acquisitions



Selected Computer Vision Transactions







Tokyo, Japan

May - 2018







Carlsbad, CA

April - 2018

San Jose, CA







Premstaetten, Austria

February – 2018

Martigny, Switzerland







February - 2018

Burlingame, CA



December - 2017 \$50 M



Modi'in, Israel







Cupertino, CA

November - 2017

Menlo Park, CA





Oct - 2017

\$60 M



Seattle, WA

Menlo Park, CA



August - 2017



Erfurt, Germany



WCP



Recent Acquisitions Cont'd



Selected Computer Vision Transactions



\$15.3B



Santa Clara, CA

Jerusalem

Recent Acquisitions Cont'd



Selected Computer Vision Transactions







September - 2016 \$355M



San Mateo, CA



Santa Clara, CA



May - 2016



Russia



San Francisco, CA



August - 2016 \$150 M



London, England



Venice, CA



June - 2016 \$47 M



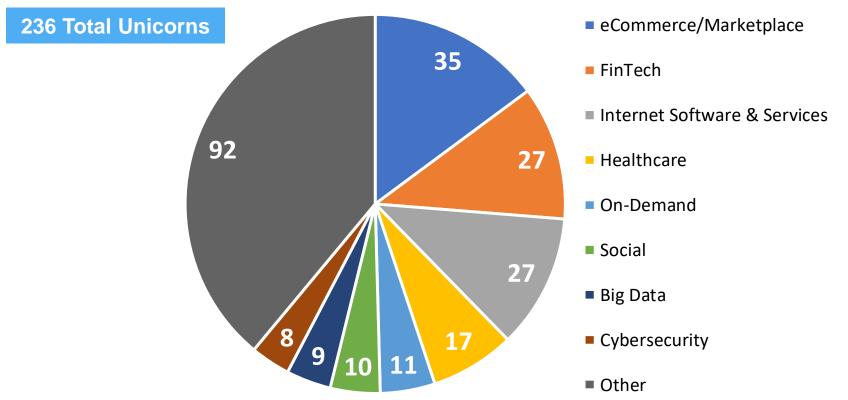
San Francisco, CA





Unicorns By Industry







Where are the Embedded Vision Unicorns?



- Only two unicorns are computer vision companies (SenseTime and YITU Technology) – both Chinese
- Vision technology is fragmented across multiple industries
- Vision is increasingly a feature, not a category
- In voice recognition, Nuance grew to dominate the sector through multiple acquisitions
- Many large potential customers for embedded vision companies are trying to develop their own solutions
- Open source



Market Trends - Consumer (Mobile / Smart Home)

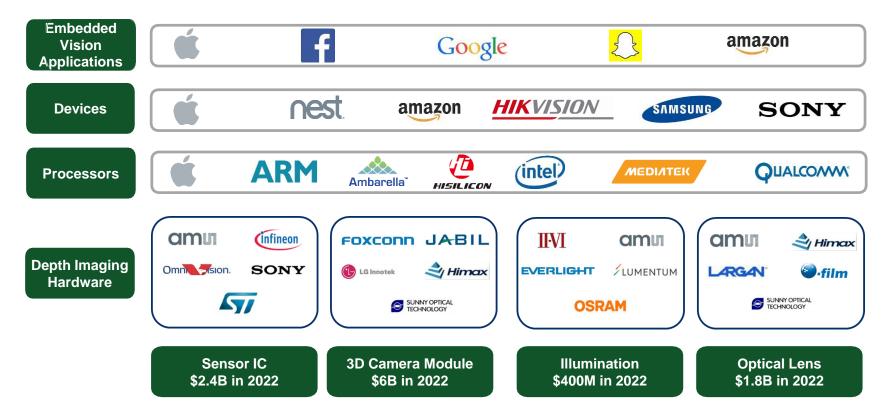


- Embedded vision has arrived in consumer markets (smart phones and home IP cameras)
- 3D front side imaging arrives in smart phones industry is scrambling to figure out market for world facing (ToF) depth imaging
- Google claims ability to do depth imaging without 3D camera
- Market for facial recognition software already getting crowded (80+ companies). Face analytics (attention, gaze, emotion, identification,...) gaining traction
- Market for home cameras is growing rapidly intelligence moving to the edge
- Smart speakers now adding eyes to the ears



Mobile / Smart Home – Market Map for Embedded Vision





Market Trends - Automotive



- Number of cameras per car continues to rise
- Increasing importance of sensor fusion software
- Adoption of fast networks + requirements for sensor fusion may push processing from edge to central processor
- Opportunity for vision technologies to eliminate/reduce need for LiDAR?
- Growth opportunities for both driver monitoring systems (DMS) and outward facing vision systems



Key Takeaways / Summary



- Vision technology is going horizontal
- 2. Computer Vision market is expected to be worth over \$25B by 2025
- Long term, two of the highest growth segments are expected to be logistics and healthcare
- 4. Most of the acquisitions have been relatively small since Intel acquired Mobileye last year and Movidius in 2016
- China is investing heavily in machine vision, especially for security and surveillance applications
- New business opportunities are increasingly about finding novel use cases that can benefit from vision technology



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