

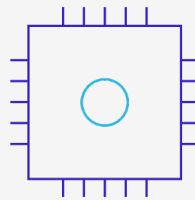
QUARTERLY UPDATE 2Q 2022

**M&A • STRATEGIC GROWTH CAPITAL • VENTURE CAPITAL
NEWS AND INSIGHTS**

JULY 6, 2022



**AI &
COMPUTER VISION**



**SEMICONDUCTOR
ECOSYSTEMS**



IoT

STATE OF THE MARKET

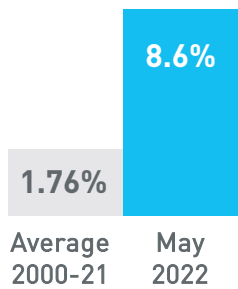
MACROECONOMIC FACTORS

What does the market look like as we reach mid-2022? 2022 has brought market headwinds, as evidenced by the Dow Jones closing 16% down (as of 6/30/22) from its peak in January 2022. Inflation is at a 40-year high, which the Fed is working to dampen with a 2000x increase in the Fed rate.

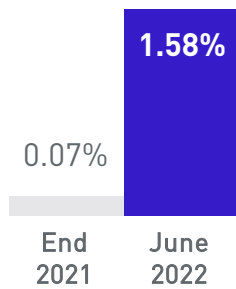
While some technology companies have begun to [announce hiring freezes or layoffs](#) (Tesla, Netflix, Meta, Twitter, Intel and others), currently the US unemployment rate is still at a nearly historical low of 3.6%. Competition for top talent remains high, especially in highly competitive markets like AI and computer vision.

MACROECONOMIC ENVIRONMENT

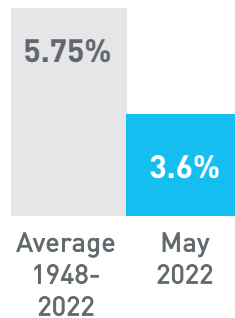
US INFLATION



FED RATE



US UNEMPLOYMENT RATE



SEMICONDUCTOR LEAD-TIMES



**RUSSIA INVADES
UKRAINE - 2/24/2022**

STATE OF THE MARKET

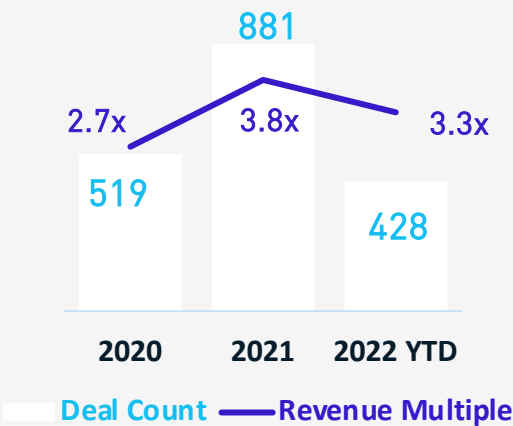
DEEP TECH M&A AND CAPITAL RAISE MARKETS

How has the environment impacted deal activity in 2022? While there are signs of caution in the market, in the deep tech market for M&A and VC transactions, deals have held fairly strong:

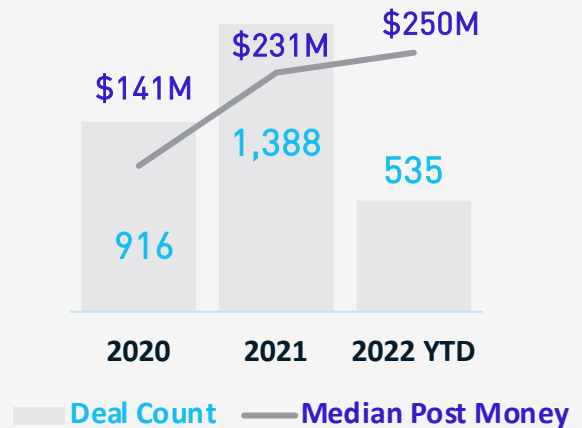
- In deep tech M&A deals, average multiples have dropped about 13%, but deal counts are still tracking to 2021. While multiples have dropped, deals are still getting done.
- In deep tech VC raises, deal counts have dropped 23%, but average post-money deep tech valuations have continued to rise. While more companies are having difficulty closing rounds, in-demand deals are still getting funded at growing valuations.

AI & MACHINE LEARNING, COMPUTER VISION, IoT & SEMICONDUCTORS

M&A DEAL TRENDS



VC DEAL TRENDS (Series B+)



STATE OF THE MARKET

FUTURE

How might the current environment impact the market in the future? Some current market dynamics may dampen M&A and VC activity in the future, which are well covered in the news. A prolonged recession, significant inflation, or continued increase in interest rates may have a negative impact on deep tech markets. For example, as interest rates increase, cost of capital increases for Private Equity borrowers, which can have a negative impact on valuations. However, strategic transactions may be less impacted by interest rates because they are often financed in cash.



There are several other signals that may positively contribute to activity in the future:

- + **Low unemployment** creates high demand for highly specialized talent in unique fields like AI/ML. This may continue to create an upward effect on valuations of companies with highly expert teams.
- + **\$1.8 trillion of dry powder** [is held by global private equity](#), an all-time high. While capital is more expensive due to interest rates, investors have a significant amount of cash to put to work. Additionally, deals financed without debt will be less sensitive to interest rates. Additionally, the US Dollar has reached a 20-year high versus the Euro, increasing the purchasing power of the Dollar.
- + **Interest in increasing U.S. semiconductor manufacturing capabilities**, driven by supply chain concerns and uncertainty regarding Taiwan. This may drive more M&A and capital raise activity for U.S. based semiconductor companies.
- + **COVID has changed the tech world forever**, as labor shortages and remote work have increased demand for automation, intelligence at the edge, and advanced computer vision - permanently.

CONNECTED VISION FOUNDER'S BLOG

WHEN TO RAISE ANOTHER VC ROUND, WHEN TO CONSIDER AN EXIT



As deep tech bankers, we hear this question frequently, since most of our clients are VC-funded. **Should we raise a next round of growth capital, such as a larger Series B or C, or is now the time to consider an exit?** Here are some quick tips on navigating these important decision.

When to lean towards raising a larger Series B/C round:

- 1) The company would grow faster by bringing in new investors and strategic partners to both the cap table and boardroom.
- 2) Management, key employees and investors are in it for the long term.
- 3) If new money comes at reasonable price and terms.
- 4) The company and its target market have great growth potential, but the customer traction and revenue aren't there yet.
- 5) You need more time to build stronger strategic relationships

When to explore M&A options:

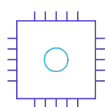
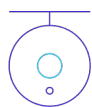
- 1) Your company would scale better as part of a larger organization.
- 2) Your industry segment is engaged in consolidation and strong deal activity.
- 3) Investors and employees are ready for liquidity.
- 4) Additional equity is expensive in terms of dilution and liquidity preferences.
- 5) Your leverage in the marketplace is very strong.

You can read the [entire article here](#).

- BRENT LORENZ & PAUL WERP, CO-FOUNDERS, CONNECTED VISION ADVISORS

INDUSTRY NEWS

AI, COMPUTER VISION, SEMICONDUCTOR ECOSYSTEMS, IoT



- Inside Meta's 175-Billion Parameter Language Model. [Meta](#)
- Sequoia publishes cautionary 52-page report on the state of the venture industry and suggesting to its portfolio to focus on profitability. [Read at Fortune](#) or [here](#).
- Bitcoin falls below \$19,000 as the world's largest digital currency remains under pressure. Bitcoin has [fallen more than 70%](#) from its all-time high of about \$69,000 in November 2021.
- Amazon's \$1B Industrial IoT Fund. Podcast Episode 369, [Stacey on IoT](#).
- Samsung Joins Chip Makers Returning to U.S. Manufacturing. [Wall Street Journal](#).
- Apple's Not-So-Secret Plan to Take Another Gigantic Bite of the Microchip Market. [Wall Street Journal](#).
- A shift in computer vision is coming. [EE Times](#)
- Peloton seeks Minority Investment to Shore up its Business. [Wall Street Journal](#).
- Smart Office Buildings Can Help Sniff Out Viruses but Are Vulnerable to Hacks. [Wall Street Journal](#).
- What is the Matter protocol for home IoT? [Matter](#), formerly known as Project Connected Home over IP (CHIP), is a proprietary, royalty-free home automation connectivity standard.

INTERESTING VC TRANSACTIONS

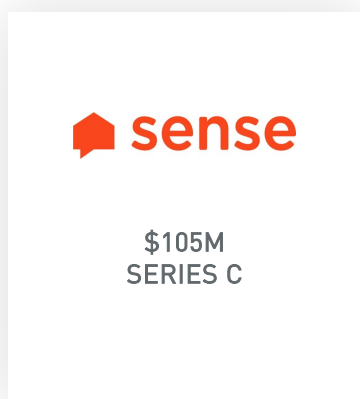
SERIES B AND ABOVE, >\$20M



ARDUINO \$32M SERIES B

INVESTORS: Robert Bosch Venture Capital, Renesas, ARM, ANZU Partners.

Arduino is an open-source company used by millions of developers around the world with a portfolio of hardware, software, connectivity and developer tools. The company raised its Series B in order to fuel growth in enterprise markets. Arduino's value proposition to enterprise was particularly appealing to strategic investors, which constituted 3 of the 4 investors in the Series B round. (Note: Arduino was advised by Brent Lorenz & Paul Werb.)

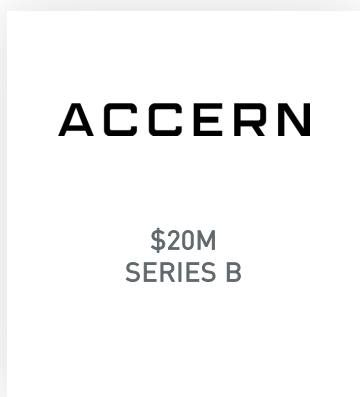


SENSE \$105M SERIES C

POST-MONEY: \$355M

INVESTORS: Blue Earth, Schneider, iRobot Ventures, TELUS, Energy Impact Partners, and others

Sense sells an AI-based home energy monitoring device that passively detects devices and power consumption in the home. Funding will be used to scale through partners like Landis+Gyr and Schneider. Read more [here](#). (Note: The author (BL) has a Sense installed in his house.)



ACCERN \$20M Series B

POST-MONEY: \$90M

INVESTORS: Fusion Fund, Gaingels, Kube VC, Mighty Capital, Tribe Capital, Viaduct Ventures

Accern has developed a no-code natural language processing (NLP) platform for the enterprise. Its mission is to enable users to extract valuable insights and drive business impact from data to decisions in minutes. Accern has solutions built for insurance, banking and asset management use cases.

Advised by certain CVA professionals while affiliated with a previous firm. Securities transaction conducted through StillPoint Capital, LLC, Tampa, FL.

INTERESTING M&A TRANSACTIONS

AI, COMPUTER VISION, SEMICONDUCTOR ECOSYSTEMS, IoT



To be acquired by



VMWARE TO BE ACQUIRED BY BROADCOM

DEAL METRICS: \$61B • 4.75X REVENUE MULTIPLE

Broadcom continues its shift towards enterprise software, after its hostile bid for Qualcomm was blocked by the U.S. government in 2018. This deal follows other enterprise acquisitions including CA Technologies for \$18.8B in 2018, Symantec for \$10.7B in 2019, and AppNeta in 2021.



Has been acquired by



REALITY AI ACQUIRED BY RENESAS

DEAL METRICS: Not reported

Renesas acquired Columbia, MD based Reality AI for an undisclosed sum in June of 2022. Reality AI offers embedded AI and TinyML products for non-visual sensing in automotive, industrial and commercial products. [The acquisition will help Renesas](#) enable its customers to embed AI in its low-power microcontrollers and microprocessors. Prior to acquisition, Reality AI had reportedly raised only about \$4M in VC and seed investments at a valuation of about \$10M.

The deal continues to demonstrate Renesas's increasing commitment to investment, also evidenced by its participation in the Arduino Series B ([see previous page](#)).



Has been acquired by



LEVL ACQUIRED BY COMCAST

DEAL METRICS: \$50M

Comcast acquired Levl, an American-Israeli IoT security startup that develops technology to authenticate wireless devices and prevent hacking and deception. Levl has developed technology that can automatically identify users without hurting their privacy. [Read more here.](#)

Previously, the company had raised \$10.8M in seed funding. Following the acquisition, Comcast announced that it will set up its first development center in Israel.

STRATEGIC VALUE

VALUE DRIVERS AND ALTERNATIVE METRICS

Financial metrics like EBITDA tend to matter little in strategic deep tech M&A transactions. Driving strategic value is like completing a puzzle that is unique for every deep tech buyer. Building strategic value starts at the team and core technology, growing as the company attains more business traction. Some of these key value drivers include:



EXPERT TEAM

- **Large, expert**, hard-to-find technical team in a highly focused, highly differentiated segment
- **Flexible talent** base that can be applied towards related buyer growth initiatives & new products
- **In desirable tech hub** in a buyer's geography, such as North America or Europe
- **Engineers are full-time** employees incentivized with a stock-option plan



CUSTOMER TRACTION

- **Validation** of the technology
- **Marquee paying customers** have vetted the technology and value
- **Large number of engaged users** including freemium, developer community
- **Verifiable pipeline** proving momentum, backing forecast
- **Compelling case studies** and references from highly visible customers and partners
- **Industry recognition** from credible independent parties



TECH PLATFORM & IP



- **Enables entry** into rapidly-growing billion-dollar market(s)
- **Highly differentiated** vs. competition, no real direct competitors
- **Scalable**, buyer can quickly grow it by leveraging its large sales and marketing footprint
- **Buy is cheaper & faster** than build
- **Defensible** IP & Patent portfolio



OPERATING METRICS

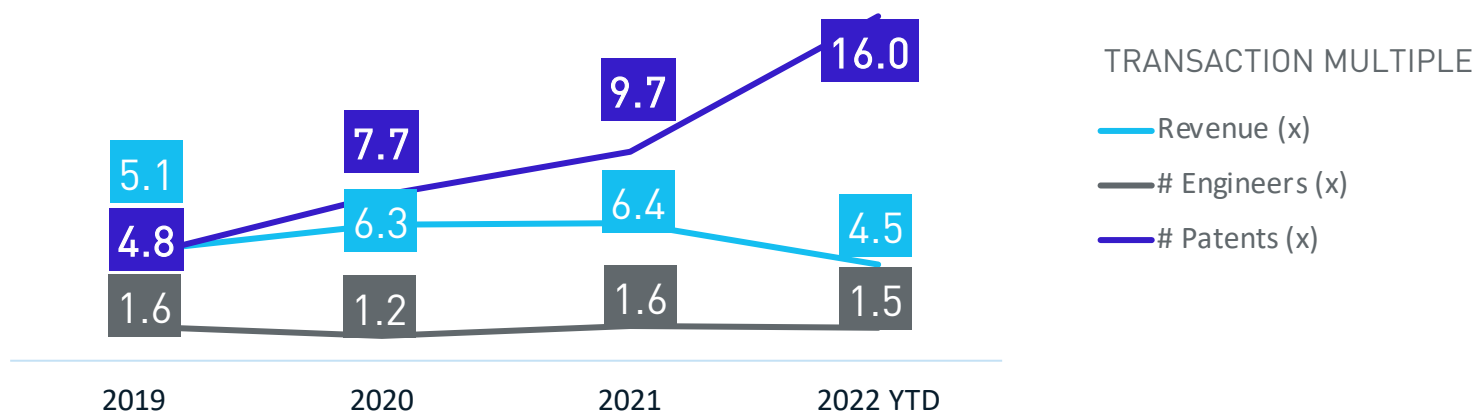
- **Revenue - growth & momentum**
- **Credible growth plan**, attaining on a quarterly basis
- **Recurring revenue**, low one-time revenue & NRE
- **Low customer concentration**
- **Strong unit economics** / GM
- **No or low debt overhang**
- **Momentum** towards profitability
- **Runway** - not running out of cash

STRATEGIC VALUE

ALTERNATE STRATEGIC M&A VALUE METRICS

Because we focus on **driving strategic value** for our clients in M&A or capital raise transactions, **we don't track EBITDA multiples**. While we do track revenue multiples, they don't show the whole picture. We also track **multiples of employee count**, as a proxy for the count of engineers, and **multiple of patents**. Each metric gives additional estimates of strategic value:

DEEP TECH ALTERNATE TRANSACTION VALUE MULTIPLES



This chart shows the median transaction multiple of Revenue, # Engineers, and # Patents

CONNECTED VISION'S VIEWPOINT: Tracking deals as a multiple of employee count and patent count gives us additional insights into some of the ways buyers value companies, beyond just revenue and EBITDA multiples.

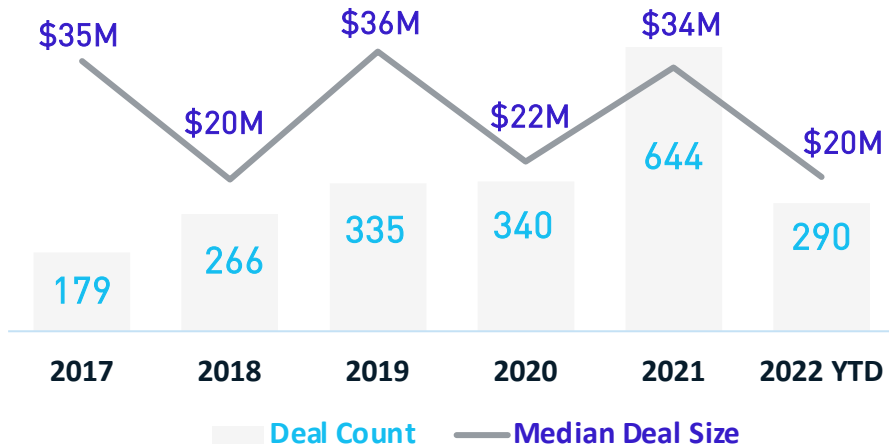
Key observations:

- **IP Multiple**, estimated by patent count, grew from 4.8 to 16.0x. This intuitively makes sense, as during the bull run, strategic buyers could help justify acquisition process to shareholders by acquiring targets with significant patent portfolios.
- **Revenue Multiple** had steadily grown to 6.4 in 2021 but fell to 4.5 in 2022. While some correction in revenue multiple is expected in 1H 2022 because of macroeconomic uncertainty, we expect this median revenue multiple in deep technology to remain strong. Additionally, we still see high-demand software companies (such as AI/ML) to attain >10x revenue, and some cases several times higher than that, even in a tougher market.
- **Engineer count multiple²**, has held steady at about 1.5x. While this is the median, CVA's deal experience is that companies with highly specialized engineering teams (such as in AI-based computer vision), multiples may reach 2.0 - 3.5x. Contact us for more details.

TRANSACTION TRENDS

STRATEGIC M&A

AI & MACHINE LEARNING

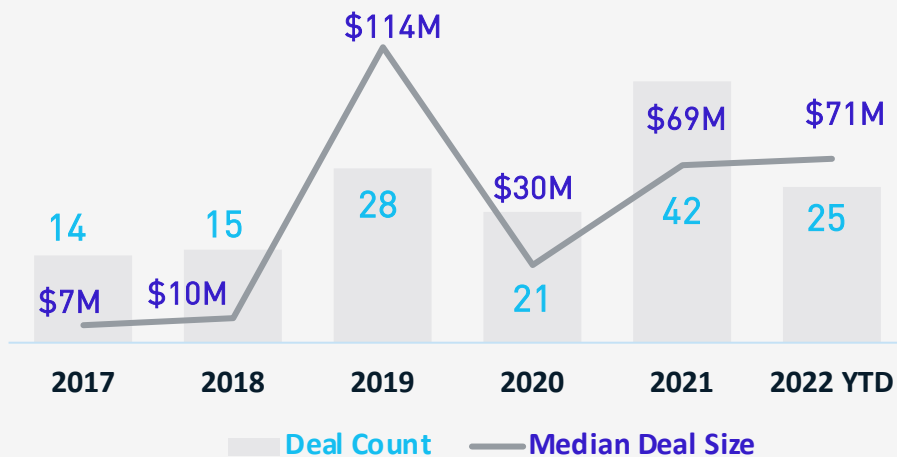


TOP BUYERS

DEALS

	20
	16
	12
	10
	10
	9

COMPUTER VISION



TOP BUYERS

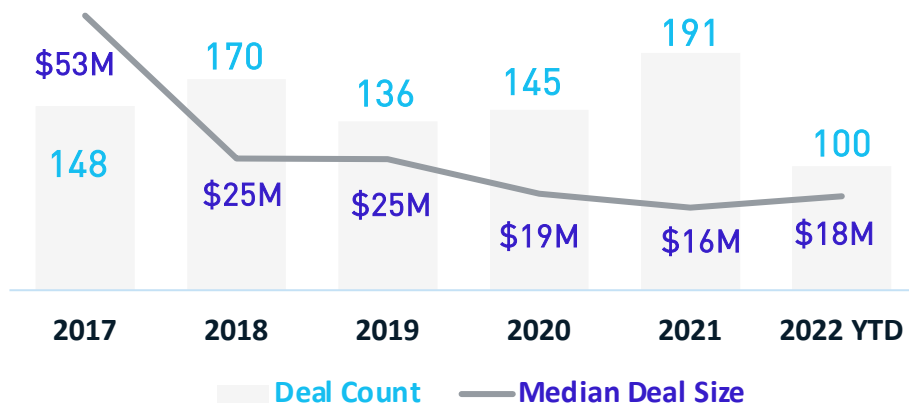
Deals

	3
	3
	2
	2
	2
	2
	2

TRANSACTION TRENDS

STRATEGIC M&A

IoT

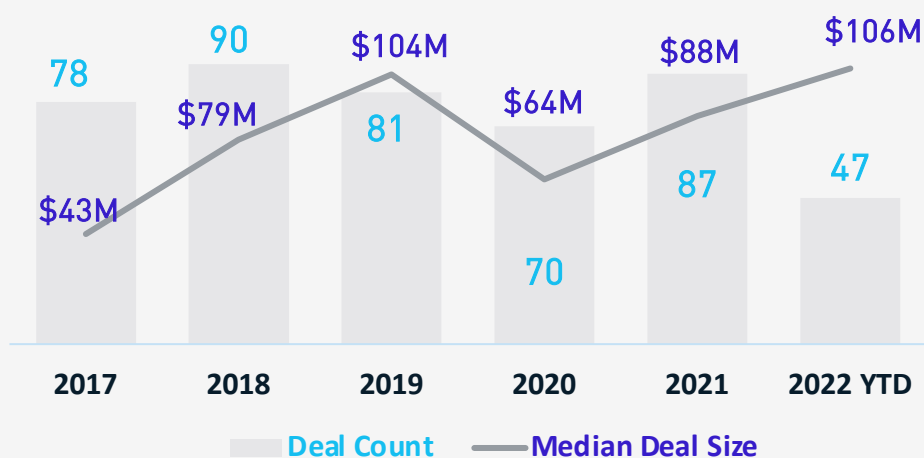


TOP BUYERS

DEALS

ASSA ABLOY	8
accenture	5
SIERRA WIRELESS	4
Panasonic	4
COMCAST	5
DIGI	3
SECO	3

SEMICONDUCTOR



TOP BUYERS

Deals

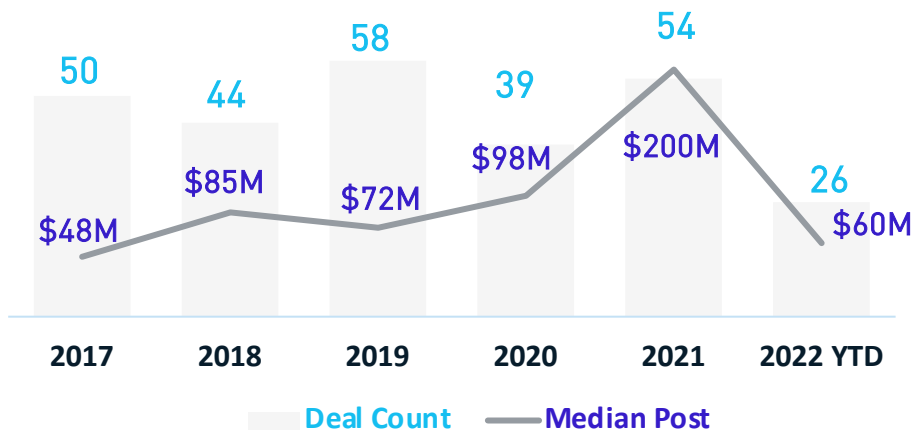
intel	6
MARVELL	5
QORVO	5
infineon	4
SYNOPSIS	4
ST	4

TRANSACTION TRENDS

VENTURE CAPITAL INVESTMENTS - EMERGING SPACES

Artificial Intelligence Emerging Spaces

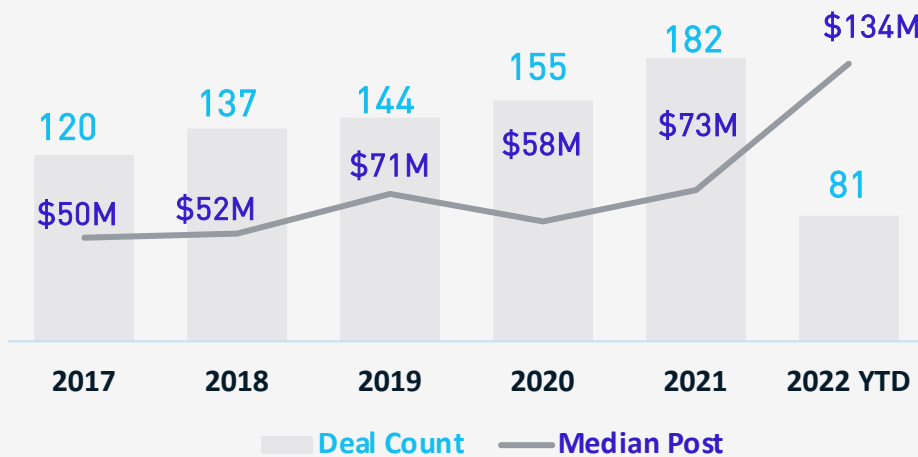
TinyML, Low Code / No Code, Edge Computing Semiconductors, Cognitive Computing, AI Ops



TOP INVESTORS	# DEALS
Intel Capital	13
OurCrowd	11
BOSCH	9
Celesta	8
SEQUOIA	8
INSIGHT PARTNERS	7

IoT Emerging Spaces

Robotic Process Automation, V2X, LiDAR, Digital Twins, Silicon Photonics, IoT Security, LPWAN



TOP INVESTORS	# DEALS
Innovate UK	22
BESSEMER VENTURE PARTNERS	16
luxcapital	14
OurCrowd	10
vertex VENTURES	10
Intel Capital	9

RECENT M&A TRANSACTIONS

STRATEGIC ACQUISITIONS

TARGET	BUYER	VALUE (\$M)	REVENUE MULTIPLE	DESCRIPTION
Levl	Comcast	50		IoT security and device authentication
Reality AI	Renesas			Sensors & Edge AI / TinyML
Senseye	Siemens			Cloud-based machine monitoring
Seebo	Augury	200		AI-based predictive maintenance solution
Light	Deere			Depth perception technology for automotive
VMware	Broadcom	61,000	4.8	Virtualized IT infrastructure software
Silicon Motion	Maxlinear	3,800	3.9	Semiconductors including memory & GPU
PTC (PLM Business)	ITC Infotech	\$115		Product development software business
SigFox	UnaBiz			IoT connectivity service
Knowmadics	WaveDancer	90		IoT device management platform
Premonition (Logistics)	Shippit	21		AI-based logistics platform for fleets
Linode	Akamai	900		Cloud hosting for ML, video and websites
PEKAT VISION	Datalogic	18		Quality assurance & inspection automation
GeoPhy	Walker & Dunlop	290		AI-based property analytics platform
Streamlit	Snowflake	800		Open-source application framework
BA Insight	Upland Software	34		AI-driven cognitive search
AI.Music	Apple			AI-driven music creation
StreetLight Data	Jacobs Engineering			Transportation data platform for vehicles, bikes and pedestrians
VisionLabs	MTS AI	91		Visual recognition for facial verification and identification
FogHorn	Johnson Controls			Edge intelligence software for real-time industrial grade analytics
Mirametrix	Lattice	68	>10x	AI-based attention sensing and eye gaze tracking software

Sources: PitchBook and CVA proprietary research

RECENT VC TRANSACTIONS

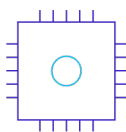
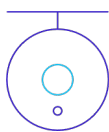
CAPITAL RAISE, SERIES B+ >\$20M

COMPANY	SERIES	DEAL SIZE (\$M)	POST MONEY (\$M)	DESCRIPTION
Arduino	B	32		Open-source hardware, connectivity and tools for embedded developers
Dusty Robotics	B	45	251	Robotics for construction
Vayyar	E	108	1,000	Sensors for high-resolution images
Cavnue	A	130		Autonomous roadways
Accern	B	20	90	No-code NLP platform
Sense (Home Energy)	C1	105	355	AI-powered home energy monitoring
RelationalAI	B	75	595	Relational knowledge graph system
Replicant	B	78	478	Conversational AI for customer support
Bright Machines	B	71	871	Manufacturing automation software
Videoverse	B	47		Video meta-tagging platform
Optimal Dynamics	B	33	190	AI-based logistics optimization
Built Robotics	C	64	353	Autonomous vehicle software heavy equipment
LuminWave	B	20		Solid-state LiDAR hardware & software
Nreal	C1	60		AR and mixed reality tech for smart glasses, including SLAM-based AI
Celona	C	60	360	Edge AI compute apps for enterprise
Syntiant	C1	55	415	Neuromorphic semiconductors that move AI / ML from cloud to edge
Quadric.io	B	21	116	Edge processor for autonomous products, IIoT and robots
Bear Robotics	B	81	481	Self-driving robots for serving food at restaurants
Run:AI	C	75	389	Deep learning data science platform
Alif Semiconductor	C	113	713	Semiconductors to connect and secure low-power high performance edge

Sources: PitchBook and CVA proprietary research


ABOUT CONNECTED VISION ADVISORS





DEEP TECH INVESTMENT BANKING





- + **We are a deep tech investment banking firm.** We advise on M&A and capital raise transactions. We are experts at driving strategic value in technology deals.
- + **We aren't your typical financial bankers.** We are electrical engineers and former executives, and we have seen deals from all sides: large tech, startups and as bankers. Our experience gives us unique insights that helps us drive the best outcome for our clients.
- + **We focus on AI, Computer Vision, Semiconductor Ecosystems and IoT markets,** working with market-leading software, hardware and IP companies.
- + **Our team is global,** based in the USA, UK and Canada. We have deep experience doing deals across North America and Europe.
- + **We work with buyers and investors** like Qualcomm, Cisco, ARM, Bosch, Amazon, Renesas, Intel, Lattice, Cadence, Faurecia and many more.

Transaction Experience



Series B



Has been acquired by



**SPORTS TECH
COMPUTER VISION AI**
Has been acquired by





**SMART BUILDING
COMPUTER VISION AI**
Has been acquired by






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