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Emerging Spaces

B2B industry sector

3D printed buildings

3D printed buildings refers to the construction industry's use of 3D printing technology to fabricate structures. Utilizing this technology, construction can be completed more quickly, with fewer resources and at a lower cost than traditional building methods.

AI in Foodtech

AI in FoodTech startups are tapping into food system data sources to build AI tools for a growing list of use cases including predicting consumer trends, reducing food waste in production facilities, and helping consumers find products. The expanded use of AI is being driven by a dramatic increase in food system data capture points, such as consumer preference data captured through e-commerce, digitized food ingredients and nutritional information ,and consumer and industrial equipment that can harvest vast quantities of production and distribution data.

Autonomous flight

Companies in this space are developing technology to allow for the flying of aircraft autonomously. Solutions in this space are being developed for a variety of aerial craft, including standard planes and helicopters, as well as drones and urban transport vehicles. Autonomy is a desirable solution for riskier types of flying, such as crop dusting and urban transportation, as well as ultimately providing a more affordable and safer option in the long run.

Autonomous shipping

Autonomous shipping companies use technologies like computer vision, LiDAR and artificial intelligence (AI) to automate the shipping of goods in the maritime industry. Autonomous ships could decrease the risk of collision, as well as reduce crewing costs.

Autonomous trucking

Autonomous Trucking companies are using technologies such as lidar, computer vision, and artificial intelligence to automate the long-haul trucking industry. Self-driving trucks have the unique advantage of typically having well-defined routes to travel, making the challenge of full autonomy more realistic relative to their car counterparts. Autonomy is predicted to be a standard feature in first-mile logistics by the end of the next decade.

Blockchain real estate

Blockchain real estate uses blockchain and the underlying distributed ledger technology to increase transparency in real estate transactions.

Cannabis breathalyzers

Cannabis breathalyzers are tools law enforcement agencies can use to test for impairment of drivers potentially under the influence of marijuana.

Climate risk modeling-as-a-service

Climate Modeling-as-a-Service describes companies analyzing climate data with the intention of providing risk assessments to enterprises. As increased global temperatures make weather patterns more unpredictable, these startups aim to provide more stability to businesses risk modeling. Often leveraging artificial intelligence, applications in this space include flood risk assessment, real estate valuations, and agricultural production, among others.

Commercial space launch

Commercial space launch includes companies launching satellite payloads, organizing and providing satellite launch capabilities or developing infrastructure for launch.

Construction robots

Construction Robots refers to machines being used on construction jobsites to assist workers with tasks typically done by human laborers. Though the complexity of the modern jobsite means that humans will likely always be needed to monitor and assess building progress, repetitive tasks such as bricklaying, drywalling, surveying, and digging, when done by machines, save human workers time and physical toil. Given the repetitive nature of these tasks, most companies in this space are exploring various forms of autonomy, oftentimes supplementing existing construction machines with “self-operating” software.

Counter-unmanned aerial systems

Counter-unmanned aerial systems (C-UAS) are technologies and methods deployed to detect, intercept, and neutralize unauthorized aerial drones. These systems combine radar, electronic jamming, and physical interventions, serving crucial roles in military, commercial, and civilian security.

Digital freight brokerage

Digital freight brokerages are online marketplaces that connect shipping entities and truckers via mobile apps.

eDiscovery platforms

eDiscovery platforms are used by legal teams to collect, review and parse volumes of digital evidence using data analytics and technology-assisted review (TAR) to identify and tag responsive documents based on keywords and metadata.

Election tech

Election technology companies design systems to engage and empower voters to participate in democratic elections. These companies aim to make the process of voting more transparent and inclusive to combat disenfranchisement.

Electric flight

Electric Flight companies are developing hybrid or all-electric powertrains for electrified aerial transportation. Due to the lower energy density of existing lithium-ion battery technology, startups in electric flight are constrained to short to medium distance applications. Despite this limitation, electric flight is viewed as important research area to help decarbonize overall air transportation, with primary applications in logistics and passenger transportation.

Food service robots & machines

Companies in this space develop automated machines to assist food service in relation to preparation, food running and vending. These robots and machines save on labor costs by automating food service tasks like food portioning, food prep vending and more.

Ghost kitchens

Ghost kitchens are stripped-down commercial kitchens with no dine-in option. Although several varieties of ghost kitchens exist, they all share a common feature: they're focused exclusively on food delivery.

Indoor mapping

Indoor mapping technologies use floorplans, indoor positioning systems (IPS), and other private data to build comprehensive maps of any indoor space—digitally positioning people and objects in offices, venues, and other buildings.

Industrial workspace safety

Companies focused on industrial workplace safety develop technologies to reduce the likelihood of workplace accidents, which kill an estimated 6,000 people each day. These tools also give employers better ways to monitor the health and safety of their staff.

In-space manufacturing

In-Space Manufacturing startups are developing the infrastructure and technologies necessary to create and assemble materials in the microgravity conditions above Earth's atmosphere. The unique conditions of space allow for the production of materials that would otherwise be impossible or too costly to manufacture on Earth, such as organic tissue, optical fibers, and high-performance electronics. Decreasing costs in launch services are driving this trend, as companies are now finding it less cost prohibitive to fund experiments and commercial endeavors into materials production for on-Earth use, on-orbit manufacturing and servicing, and space exploration.

LPWAN

LPWAN is a type of wireless communication network designed to enable long-range communication at a low bit rate between various sensors. The technology is lucrative because it allows owners of sensors to deploy them in a wide geographical area without having to invest in other gateway technologies.

Microweather

Microweather forecasts give up-to-the-minute weather conditions for your exact GPS location. These forecasts have applications for individuals and organizations, like farmers who are trying to decide when to plant crops.

Modular construction

Modular Construction companies are developing residential and commercial buildings by manufacturing partial or whole structures in factories, which are later shipped to the construction site for installation and finishing touches. Also referred to as prefabrication, this technique is not new, but has been returning to prominence due to new engineering techniques which have brought down costs and sped up the process. Applications include temporary shelters, backyard guest houses, apartment complexes, and even full-scale office buildings.

Natural disaster preparedness & response

Companies in this space are developing technologies in order to assist individuals and businesses vulnerable to natural disasters. With severe weather events growing more frequent due to climate change, these companies offer proactive and reactive measures to help minimize loss of life and property during a disaster. Technologies in this space include AI, drones, and communication platforms, and extend to applications such as wildfires, floods, earthquakes, and severe storms.

Ocean data collection

Ocean Data Collection startups are developing tools and technologies designed to increase the volume and improve the quality of information related to the Earth's oceans. Long the domain of government-backed research grants, ocean data collection is becoming increasingly important to sectors such as marine logistics, aquaculture and fishing, and climate resiliency. An enormous portion of the world's oceans remain unexplored and under-quantified, providing an opportunity for companies that are able to provide greater insight and act as consistent data providers.

Resilient PNT

Resilient PNT startups are developing positioning, navigation, and timing (PNT) technologies to supplement global positioning systems in the event that they are unexpectedly taken offline. As the economic benefits from positioning systems have ballooned, governments have continually recognized the need for redundancies should any number of possible incidents occur in space and knock out satellite functionality. Companies in this space are developing alternatives such as eLORAN, time over fiber, and the use of constellations of low earth orbit satellites.

Satellite Servicing

Satellite servicing involves the development and application of technologies to repair, replace, refuel, and maintain satellites already in orbit. Companies in this space focus on extending satellite lifespans, enhancing performance, and reducing the need for frequent replacements. This field aims to maximize the utility and efficiency of space assets through innovative on-orbit solutions.

Small satellites

Small satellite companies are contributing to the growth of space infrastructure through the design, development, and launch of miniaturized satellites (known variously as SmallSats, nanosats, or CubeSats). Expansion in the satellite ecosystem has been driven by advancements in launch technologies and the associated decrease in costs for access to space, an increasing focus on the cost-competitiveness of developing smaller satellites with less project risk, and increasing interest from commercial actors looking to capitalize on new sources of data. Companies in this category include manufacturers of satellites, satellite components, and propulsion modules; providers of mission services; developers of onboard software and mission control systems; and launch providers and brokers.

Smart mirrors

Smart mirrors (or digital or virtual mirrors) combine the reflective quality of mirrors with augmented reality and high resolution displays. This allows users to interact with a digital interface on the surface of their mirror. Smart mirror applications are most prevalent in fitness, beauty, healthcare and consumer retail.

Smart packaging

Smart packaging systems use embedded sensor technology to monitor packages' lifecycles through the supply chain.

Sports tech

Sports technologies include wearables, biometrics and artificial intelligence technologies for those in pursuit of increased athletic performance or a better fan experience at sporting events.

Supersonic travel

Supersonic travel allows air travelers to travel faster than the speed of sound to reach their destinations in half the time. Though this has not been an option commercially since the Concorde was retired in 2003, companies in this space are competing to develop improved modes of supersonic transit.

Sustainable packaging

Companies in this space are developing alternatives to traditional packaging materials in forms such as bioplastics and plant-based polymers, among others. As a variety of national and local governments around the world begin to ban single use plastics, corporations are looking for affordable and sustainable alternatives. This space is connected to the theme of the circular economy, which aims to reuse materials to eventually eliminate waste.

Urban planning tech

Urban Planning companies are providing technology-oriented solutions to municipal governments in order to help them design cities. The growth in IoT and cloud computing has drastically increased the data points that city planners can draw on in order to help them make design decisions, allowing planners to model proposed designs and visualize potential city developments. These solutions can help with problems such as traffic and congestion management, land reclamation, utility layout, and climate impacts.

Virtual events

Virtual Events includes companies developing digital platforms to help businesses host all-online or hybrid-online events and conferences. These solutions offer a host of engagement and networking-specific features, built on the understanding that the vast majority of attendees, physical or digital, show up to make connections. Though the pandemic has been a key accelerant for the space, founders are optimistic that virtual event hosting will persist due to the ability to reach larger audiences.

Warehouse management tech

Warehouse management technologies aid in various form of warehouse management and include autonomous robots, warehouse management platforms, wearables to improve worker safety and health and asset tracking sensors and scanners.

Warehouse Robotics

Warehouse robotics refers to automated material handling and order fulfillment systems that leverage artificial intelligence and machine learning to perform operational tasks like picking, sorting, and inventory management within logistics facilities. These autonomous solutions transform traditional storage and distribution operations by optimizing efficiency, reducing labor costs, and enhancing throughput across e-commerce, retail, and manufacturing sectors.

B2C industry sector

3D printed foods

3D printed food is a way of preparing food in an automated additive way using 3D printers custom-built to handle food ingredients.

AI-enhanced learning

Companies in this space use AI to develop better educational materials for students. Artificial intelligence can be used to create more personalized learning experiences at-scale for students who lack consistent access to one-on-one instruction.

Air taxis

Air taxis refer to transportation in vertical-take-off-and-landing (VTOL) aircraft across short distances, generally best suited for urban environments. Companies in this space include both air taxi service providers and eVTOL manufacturers.

Art trading platforms

Companies in this space facilitate the trading of fine artwork via digital platforms. Many of these platforms aim to democratize fine art investments by fractionalizing ownership—sometimes through tokenization of art assets on the blockchain—dividing the ability to own works of art between multiple parties. Other companies aim to provide greater metrics and transparency into the evolving art market.

Auto commerce

Auto commerce companies simplify car ownership by digitizing processes related to purchasing, leasing, and selling, as well as maintenance and repairs.

Cannabis beverages

Cannabis beverages are CBD- or THC-infused drinks that range from tea, soda, and juice to beer and wine. They are often marketed as health and wellness products and are gaining popularity because of their convenience and potential health benefits.

Cashierless checkout

Cashierless checkout is a collection of technologies that make the retail checkout experience faster and easier by relying on computer vision and camera technologies to track what a consumer picks up in a store.

Clean meat

Clean meat is meat which has been grown in a cell culture rather than harvested directly from an animal's body after slaughter. Also called cell-based meat or cultured meat, it has the same characteristics as conventional meat but can be made by growing only the cell types that humans consume—like muscle and fat cells and connective tissue.

Connected fitness equipment

Connected Fitness Equipment companies are developing fitness hardware in the form of equipment and wearables to help users more accurately track their health and fitness metrics. These types of fitness experiences, an alternative to gyms, have grown in popularity due to their convenience for home use, and the ability to afford them via multi-year financing plans.

Electric vehicle platforms

Companies in this space are developing and manufacturing electric vehicles, powertrains, and platforms. Though electric vehicles accounted for a minuscule percentage of automobile sales in 2019, significant growth in the industry is expected as battery technology improves and decarbonization becomes a stronger policy priority. Moreover, adoption of electric vehicles is expected to increase as charging infrastructure expands, major OEMs increase investments into the tech, and autonomy providers lean towards EVs for their computing advantages.

End-of-life planning

The End-of-Life Planning space includes companies providing services and technology related to death. Though end-of-life arrangements such as estate planning and funeral accommodations have historically been handled discretely, a younger generation of entrepreneurs are looking to make the topic of mortality more transparent, hoping to provide greater options and peace of mind to those dealing with loss. Applications in this space include virtual memorial services, sustainable burial and cremation, remembrance items, and estate planning services.

Hyperloop

A Hyperloop is a theoretical mode of transportation whereby a pod, containing passengers or freight, is accelerated through a sealed system of tubes with minimal air pressure. The lack of air resistance means that Hyperloop could transport pods through the tube at up to hypersonic speeds while being very energy efficient. Such potential means that Hyperloop could exist as a cheaper, more sustainable, and faster method of transportation between cities.

Income share agreements

Income share agreements (ISA) education include technology-focused educational institutions that allow students to pay a percentage of their future income in lieu of upfront tuition.

Insect-based foods

Insect-based food companies use insects as a key ingredient to produce food and drinks like beer, pasta, energy bars and more. Growing insects for human consumption is touted as sustainable, cheap and nutritious, all while having a smaller environmental impact than conventional meats.

Livestream commerce

Livestream commerce, a type of social commerce, involves the selling of goods via live social media feeds. Consumers tune into hosts, typically online influencers but sometimes celebrities, who detail the value and perks of various types of merchandise. Users can ask questions or offer reactions in real time, making the experience more engaging and boosting potential conversion rates. While this can occur via the incumbent social media apps such as Instagram and TikTok, much of the social commerce innovation is happening by way of new apps dedicated to livestream shopping.

Smart clothing

Smart clothing uses micro-sensors embedded into traditional clothing items, typically to track biometric data. This tech-enabled clothing allows people to monitor their physiological functions conveniently and discreetly.

Smart home assistants

Smart home assistants are platforms that integrate with smart home device application program interfaces (APIs) to enable home automation through a universal control platform.

Smart jewelry

Smart jewelry is a type of wearable technology that monitors users' vital signs while looking aesthetically like typical jewelry.

Smart locks

Smart locks are digitally-enabled door locks that connect to apps and central access management systems. In some cases, they use biometrics for instant access.

Social audio

Social Audio startups are developing communication-oriented mobile applications which emphasize audio content as the primary method for sharing and engaging with other users. Companies in this space believe that audio as a medium, distilled from video or text, represents the next great opportunity, in part because of the growth of headset hardware such as Bluetooth headphones. Applications in this space include social podcasting, productivity collaboration, private chat, and social media.

Space tourism

Space tourism companies offer recreational space travel. Space tourism is in a nascent stage with trips remaining infrequent and highly expensive. Many of these companies hope to make recreational space travel available and affordable to more people over the coming years.

Sustainable fashion

Sustainable fashion companies create clothing using fewer or alternative materials that contribute less waste to the environment.

Sustainable tourism

Sustainable tourism is the idea that travel should have a positive impact on the environment, culture and economy of the place being visited. Companies in this space encourage a sustainable ethos by curating tours and experiences, giving some proceeds back to local communities and causes, and by practicing and encouraging environmental stewardship.

Energy industry sector

Batteryless IoT sensors

Batteryless Internet of things (IoT) sensors draw power from their environment—either through electromagnetic signals or small solar cells—and enable IoT sensing in low-power environments. Companies in this space are developing batteryless and no-maintenance sensing solutions for the fundamental limitations of batteries.

Carbon capture & removal

Carbon capture and removal refers to the process of actively capturing carbon atoms and removing them from the atmosphere via storage or utilization in other forms. Technologies in this category are centered on climate change mitigation and include afforestation, biochar, carbon sequestration and direct air capture.

Concentrated solar power

Concentrating Solar Power (CSP) is the process of of harnessing solar thermal energy using an arrangement of mirrors to heat a specific focal point, which collects and stores the heat energy to power a turbine, thus generating electricity. CSP projects are almost exclusively used in utility scale scenarios, with the goal of providing power directly to the electricity grid, though applications could be expanded to power a generator for localized energy use. Current research is focused on improving unit economics by reducing manufacturing costs, developing new storage technologies, and increasing automation of operations.

Electric vehicle charging infrastructure

This space includes companies building EV charging infrastructure to support the electrification of the mobility sector. The number of charging outlets has significantly expanded as awareness and adoption of electric vehicles has increased, and this trend is expected to continue and accelerate as large automakers such as GM continue to make investments into electric vehicle development.

Energy storage

Energy storage technologies improve our ability to store energy for use on-demand, especially as sources of energy expand into renewables. Companies in this space use many approaches, like batteries, thermal, pumped hydropower and other mechanical storage methods.

Fusion energy

Fusion energy is a proposed form of power generation that would use heat from nuclear fusion reactions to generate electricity. It has the potential to eliminate dependence on fossil fuels, but the core technology is still theoretical and many startups in the space are focused on finding pragmatic applications of the underlying theory.

Hydrogen energy

Companies in this space are developing methods, machines and materials to harness the power of hydrogen to generate energy. Its zero-emission output and high energy density make hydrogen a promising energy source, but companies are still looking for a way to reduce the cost of production.

Geothermal power

Geothermal power involves the extraction of heat from deep within the Earth's crust to generate electricity. This renewable energy source utilizes the Earth's internal heat to produce steam that drives turbines connected to electricity generators. Unlike solar or wind energy, geothermal power can provide a constant energy supply, regardless of weather conditions, making it a reliable and sustainable option for base-load electricity generation.

Lithium extraction technology

Companies in the lithium extraction technology space are developing novel solutions to the problem of mining lithium. Historical approaches are too slow and use an unsustainable amount of water, but newer solutions propose to mine at greater yields with less water and often in areas previously considered inaccessible.

Next-generation battery technology

Next-generation battery technology refers to the development of improvements or alternatives to the lithium-ion battery. These improvements and alternatives often involve new materials using advances in chemistry and materials sciences. Improved battery life is expected to enable advances in electric vehicle range, the performance and convenience of consumer electronics, and better storage options for renewable energy.

Next-gen nuclear fission

Next-gen nuclear fission refers to advanced nuclear technologies, including Small Modular Reactors (SMRs) and Generation IV reactors, that promise enhanced safety, efficiency, and sustainability compared to traditional nuclear power plants, focusing on modular design for easier deployment and innovative systems for better use of fuel and reduction of waste. Additionally, it encompasses supporting technologies and innovations provided by various companies, including advanced component manufacturing and waste disposal techniques, further bolstering the sector's evolution towards cleaner and more efficient energy production.

Renewable ocean energy

Renewable ocean energy describes efforts to generate electricity from the ocean using waves, tides, salination and temperature differences. The movement of water in the world’s oceans offer an untapped source of kinetic energy that companies in this space hope to capture. Currently, companies are testing competing iterations of technologies while working toward bringing costs of ocean power down to compete with wind and solar.

Small modular reactors

Small modular reactors (SMRs) are nuclear reactors designed with modular technology using module factory fabrication, pursuing economies of series production and short construction times. The small size of these reactors makes them easier to construct, safer and more easily deployed to remote areas that have intense energy needs.

Smart grid

The smart grid refers to digital technology that allows for two-way communication between power utilities and their customers, enabling the more efficient transmission of electricity.

Thermal batteries

Thermal batteries are technologies designed to store excess thermal energy—either hot or cold—for later use, helping to balance energy demand and supply. These systems utilize materials and processes that can absorb, retain, and release thermal energy, making them crucial for enhancing the efficiency and reliability of energy systems, particularly with renewable energy integration.

Waste to energy

Companies in this space are developing techniques to convert both organic and inorganic waste into usable energy such as hydrogen, biofuels, and syngas. These companies are developing technologies that aim to improve on traditional incineration, which expends a lot of energy and creates unwanted pollutants. Separate from the circular economy, entrepreneurs in this space believe that waste is a serious carbon emitter that is here to stay without significant waste removal efforts and technologies.

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Finance industry sector

Alternative home financing

Alternative Home Financing startups are providing new financial options for individuals who aspire to home ownership, but who may not have the credit history or down payment necessary to undertake the traditional mortgage process. A large portion of individuals with stable incomes who want to buy a home are locked out of the market due to inadequate savings or poor credit, often a consequence of burdensome student loans, childcare costs, and other economic hardships. Companies in this space primarily offer co-investment business models, in which the company will buy the majority of a home in partnership with an aspiring homeowner, with the understanding that they will gradually earn equity in the home to be able to buy it out from the company at a later point.

Banking as a service

Banking as a Service (Aka BaaS, Banking as a Platform, BaaS) encompasses technologies that enable non-banks to offer core banking services such as deposit, checking and savings accounts or loans to end-users. BaaS allows third parties to connect with established banks' systems directly via APIs to build banking offerings on top of already-regulated infrastructure. Some companies in this space can be described as "tech companies with banking licenses." Examples of BaaS platform uses include allowing businesses to offer fully digital and compliant financial services, ledger managers, end-to-end payment services, payment card programs and e-wallets.

Carbon offset trading platforms

Carbon offset trading platforms support participants purchasing and selling carbon offsets on the voluntary carbon market. These platforms are expected to become an integral component of climate change mitigation efforts, as organizations that may not necessarily be capable of reducing their emissions can still fund projects that can.

Conversational banking

Conversational banking includes platforms that facilitate consumer interactions through voice, text or other visual interfaces—typically with a non-human—to conduct banking queries and transactions.

Decentralized finance

Decentralized finance encompasses conventional financial tools and services built on blockchain. Companies in this space develop open lending protocols, insurance and investing platforms, decentralized prediction markets and other blockchain-based alternatives to traditional finance.

Microinsurance

Microinsurance providers offer flexible, consumer-centric insurance products. Traditionally, modes of microinsurance—like microloans and microcredit—is thought of as a product for people in developing areas, but this space also encompasses companies innovating in personalized, micro-policy plans that cover international travel, cycling, fitness, mobile and other niche policies.

NFTs

Non-Fungible Token (NFT) startups are developing the protocols, infrastructure, marketplaces, and applications necessary to enable virtual ownership of unique digital assets. NFTs are growing in popularity in part due to the global rise in legitimacy of cryptocurrencies, and as a viable way to ensure trusted and authenticated ownership using the blockchain. Companies within this space are enabling the minting of new NFTs, developing online gaming, art, and collectible ecosystems that utilize NFTs, and building marketplaces to allow for a more streamlined exchange of NFT assets.

PayFac enablers

Payment facilitator (PayFac) enablers are payment systems that allow software providers to integrate payment offerings and capture additional revenue by becoming the merchant of record in their own transactions. Using the PayFac enabler model, businesses can offer merchant services by underwriting sub-merchants.

Real estate crowdfunding

Real Estate Crowdfunding startups are democratizing access to property investing through the use of equity and debt crowdfunding models as well as eREITs. Property has traditionally been an attractive alternative investment, but one harder to access for lower-net worth individuals and non-accredited investors. These platforms enable individuals to contribute as little as $500 towards a real estate project or fund, with returns coming from either rental income or interest payments on mortgages.

Security deposit alternatives

Companies in this space provide alternative options to traditional security deposits which can hamstring cash-strapped renters with an upfront financial obligation. Many cities are expected to pass laws requiring landlords to provide options beyond security deposits—like surety bonds and lease insurance. These options are technically more expensive than a security deposit, but companies are banking on tenants caring more about their cashflows.

Youth banking

Youth Banking startups are providing parent-monitored digital banking services targeted towards young children and teenagers. Increased digitization in financial services has made the predominantly cash transactions between parent and child all the more peculiar, necessitating a digital solution that enables parents to more easily disburse pocket money, teach their children about financial literacy, and track their child's spending. Companies in this space are predominantly neobanks, generally providing a physical card connected to a mobile app that enables its users to track their total balance, complete money transfers, and even create savings goals.

Healthcare industry sector

AI-powered drug discovery

AI-powered drug discovery companies research and experiment with artificial intelligence to discover new pharmaceuticals and drug therapies. AI systems sift through millions of chemical compounds and isolate the most promising at a fraction of the time it takes traditional methods. No drugs created using AI are on the market, but proponents hope technological advances will decrease development times and enable pharma companies to develop drugs in previously unprofitable areas.

Anti-aging

Anti-aging refers to companies researching and developing restorative treatments to combat the effects of aging and increase lifespan. Research areas include genomic instability, telomere attrition, epigenetic alteration, loss of proteostasis, deregulated nutrient sensing, mitochondrial dysfunction, cellular senescence, stem cell exhaustion, and altered intercellular communication.

Assistive tech

Assistive Technology refers to any item, piece of equipment, software, or product that is used to increase, maintain, or improve the functional capabilities of persons with disabilities. Though the space has been around for some time, a new wave of companies are using emerging technologies such as VR/AR, artificial intelligence, and robotics among others to jump start innovation and offer more compelling solutions for disabled individuals.

CRISPR diagnostics

CRISPR diagnostics refer to the use of the gene editing tool for diagnostic purposes. The underlying science relies on CRISPR's ability to isolate snippets of genetic material it has been programmed to find. In theory, this technology could produce diagnostic results quicker, cheaper and with fewer trained professionals needed to administer the tests.

Fertility tech

Fertility technologies are creating tech-oriented medical solutions for couples struggling to conceive. These technologies include sperm and egg freezing services, hormone testing systems and monitoring platforms.

Gene therapies

Gene therapies insert sections of DNA into a patient's cells to correct damaged or abnormal genes. Gene therapies are an exciting advancement because researchers in the space could eventually lead to cures for cancer, HIV and heart disease.

Longevity Tech

Longevity tech refers to companies researching and developing restorative treatments to combat the effects of aging and increase lifespan. Research areas include genomic instability, telomere attrition, epigenetic alteration, loss of proteostasis, deregulated nutrient sensing, mitochondrial dysfunction, cellular senescence, stem cell exhaustion, and altered intercellular communication.

Medical exoskeletons & prosthetics

Medical exoskeletons and prosthetics companies develop mechanically powered prothesis and exoskeletons to be used for medical purposes.

Medical robotics

Medical robotics are robots used in healthcare settings with the benefit of providing services more precisely or consistently than human doctors could. Applications include surgeries, rehabilitation, telepresence, transportation and general patient care.

Mental health tech

Mental health technology companies develop software and hardware solutions to help individuals take better care of their mental health and enable practitioners to better monitor the mental health of their patients.

Nanomedicine

Nanomedicine is the medical application of nanotechnology—from the medical application of nanomaterials and biological devices to nanoelectronic biosensors.

Neurotechnology

Neurotechnology refers to technology that enables us to better understand consciousness, thought, and higher order activities in the brain. Companies in this space are developing brain-machine interfaces, implantable devices, neuroprosthetics, neurostimulation, and neuromonitoring devices.

Spatial biology

Spatial biology is an innovative field of molecular biology that investigates cells and their molecules within the 2D or 3D context of tissues. It uses advanced techniques such as fluorescence in situ hybridization (FISH), next-generation sequencing (NGS), and microscopy. This approach offers novel insights into cellular function and can lead to new strategies for preventing and treating various diseases.

Psychedelics

Psychedelics includes companies harnessing mind-altering substances for the purpose of treating mental illnesses such as addiction, depression, and post-traumatic stress disorder. Though substances such as psilocybin and LSD have long been outlawed by the US government, changing cultural attitudes and recent promising scientific studies have re-opened the door for their potential authorization. Companies in this space are primarily developing psychoactive treatments for mental health conditions, but may also be operating clinics to provide said therapies, or developing software to help clinics manage patient treatment.

Sleep tech

Sleep technologies encompass a variety of technologies whose goals are to improve the quality of a person’s sleep. Examples of sleep technology include tracking sensors, smart mattresses and sleep-monitoring headbands.

VR health

Companies in this space use virtual reality (VR) to provide innovative therapies and treatments to various healthcare issues. Uses of VR in healthcare include education, therapy, rehabilitation and even mindfulness.

IT industry sector

4D printing

4D printing utilizes special materials and sophisticated designs that are programmed to prompt the 3D printed object to change its shape post-production. Companies in this space are developing 4D printing technologies and relevant materials such as chemicals, electronics, particulates or nanomaterials. Applications for 4D printing include, but are not limited to, printed proteins and wider medical applications.

AI neoclouds

A new generation of computing service that specializes in renting high-performance resources optimized for advanced artificial intelligence and machine learning tasks. These platforms offer access to specialized compute capabilities—such as GPUs, TPUs, and custom AI accelerators—delivering cutting-edge performance and flexibility tailored to the intensive computational needs of AI applications.

AIOps

AIOps refers to the use of big data analytics and artificial intelligence (AI) to provide visibility into the state and performance of the IT systems that businesses rely on.

AI-powered code completion

AI-powered code completion uses context-aware machine learning algorithms to speed up the coding process. Applying predictive text generation, which is similar to autocorrect, augments software development by reducing keyboard input and rote memorization. These tools can generate code from natural language inputs, locate and address bugs, and translate from one programming language to another. As models and training data improves, a growing number of developers are expected to incorporate code completion tools into their tech stack.

Artificial General Intelligence (AGI) Research

The goal of AGI research is to develop systems that demonstrate general intelligence, capable of reasoning, problem-solving, and autonomously adapting to new challenges without task-specific programming. Unlike narrow AI, which is designed for specific tasks, AGI has the potential to perform any intellectual task a human can, with the capacity to automate the majority of economically valuable work across diverse industries.

Autonomous delivery

Autonomous delivery involves the use of ground and air-based drones to facilitate last mile delivery in urban areas or other confined areas. These companies hope to save costs on human capital by managing a fleet of autonomous robots to complete deliveries.

Autonomous vehicle simulation

Autonomous Vehicle Simulation focuses on virtually simulating road, traffic, and vehicle conditions for the purpose of developing self-driving cars. Autonomous vehicles face the burden of heavy public and regulatory scrutiny before they attain approval to operate on public roads. In order to expedite the real world testing process, these vehicles require millions of miles of testing, much of which can be accomplished virtually with these systems.

Blockchain gaming

Startups in this space are integrating aspects of blockchain technology into video games in an effort to alter gaming business models and increase player agency. Blockchain technologies, notably in the form of non-fungible tokens (NFTs) and decentralized autonomous organizations (DAOs), are seen as a way to disaggregate revenue streams away from publishers, giving more control and ownership to players. Blockchain gaming companies are either creating blockchain games or providing the infrastructure that enables them.

Cloud gaming

Cloud gaming is the hosting of video game-related content for a subscription fee, effectively decentralizing the local hardware normally required to play video games into the cloud. Though the technology requires a stable and fast internet speed, it has the potential to expand the gaming market.

Cloud workload protection

Cloud workload protection platforms enable threat detection and codebase hardening for applications in container-based, serverless and virtualized environments.

Cognitive computing

Cognitive computing companies develop platforms built on self-learning algorithms that use data mining, pattern recognition and natural language processing to mimic the way the human brain works.

Computational storage

Computational storage is a new IT architecture whereby compute functions are added to the data storage layer, rather than moving the data up to the host CPU for processing as in traditional computing.

Contract management automation

Contract management automation includes companies using artificial intelligence (AI) and algorithms to streamline the creation, negotiation, renewal and maintenance of legal contracts.

Crowdsourced testing

Crowdsourced Testing is an emerging type of software testing which leverages a large group of participants to remotely test websites, mobile apps, and software. Using this approach, software is able to be tested from a variety of perspectives which makes it more reliable, cost-effective, fast, and bug-free. This method also makes it easier for companies to recruit specific groups of users for usability testing.

DAOs

Decentralized autonomous organizations, more commonly referred to by the abbreviation DAOs, are organizations that use smart contracts maintained on blockchains to govern interactions between users, group incentives and outputs, and membership conditions. DAOs represent a departure from traditional hierarchical organizations in that control and decision making need not be highly centralized, and decisions among group members are largely facilitated via governance token ownership and voting. DAOs have been created for a variety of purposes such as crowdfunding, gaming, and investment, each channeling the ethos that participation and ownership should be democratized.

Data center cooling tech

Data Center Cooling startups are developing alternatives to traditional air cooling in order to help mitigate the excess heat being generated by more powerful server computing technologies. As transistor sizes reach an atomic plateau, companies are relying on larger processors that consume more power and thus generate more heat. In response, technologies such as liquid immersion cooling, direct-to-chip cooling, and underwater cooling are being adopted in order to help data centers continue to operate at full capacity without the risk of overheating.

Database sharding

Database sharding is a type of relational database architecture that partitions databases into smaller chunks that can be spread across multiple servers and stitched together more easily than other monolithic databases.

DevSecOps

DevSecOps encompasses platforms that enable software developers to embed security protections within their code, test their code's vulnerabilities on a regular basis and deploy application updates securely.

Digital avatars

Digital Avatars are animated human replicas that use computer vision to replicate users' physical behaviors. Such avatars can be used across gaming, social media, and enterprise communications to help create novel interpersonal and entertainment experiences. Enterprises are exploring the potential of avatars to handle various customer service tasks, while the high traction of virtual Fortnite concerts and Animal Crossing events has shown the potential of avatar engagement in entertainment settings.

Digital twins

Digital Twins are virtual replicas of physical assets, often machines or buildings, that allow for these assets to be tracked or manipulated via a software platform. Most digital twin companies are working on creating living digital simulations, which incorporate internet of things sensors, artificial intelligence, and software analytics to update and change the virtual twin as their physical counterparts change. Other companies in the space are more reliant on Lidar and drones to periodically update and survey physical installations. The implementation of digital twins aims to provide decision makers across industries greater efficiency and productivity.

Digital Identity Passports

Digital identity passports aggregate various credentials (IDs, banking, health data) into a single digital format. They provide secure, frictionless access to services requiring identity verification, allowing users to manage and share credentials efficiently. Their primary aim is to improve verification processes and ensure safe data transmission for a seamless digital experience.

DNA data storage

DNA Data Storage startups are pioneering methods to encode digital data into synthetic DNA as an alternative to silicon. The proliferation of technologies such as smartphones, sensors, and cloud computing has resulted in an explosion of data, with some estimates suggesting that we will outproduce our ability to store all of the data we create as soon as later this decade. In response, companies are increasingly looking to DNA, a molecule that excels at storing large volumes of information for long periods of time with remarkable durability.

Edge computing semiconductors

Edge computing semiconductor companies are developing novel semiconductor architectures enabling artificial intelligence and machine learning (AI and ML) inferencing in edge devices. Edge computing semiconductors can be used in battery-powered and wired edge devices, as well as some datacenter applications.

FinOps

FinOps is the integration of financial measuring software into the application development process. Companies in this space develop platforms designed to access and analyze the costs of cloud services, enabling firms to better plan, budget and forecast consumption-based spending on cloud resources.

Generative AI

Generative AI is a field of artificial intelligence that predicts human-like content across various domains using multimodal models trained on diverse inputs such as text, images, video, and speech. The technology utilizes techniques such as transformers, large language models (LLMs), and diffusion models to produce new outputs. Generative AI's applications are diverse and include art, gaming, copywriting, search, biotechnology, coding, and synthetic data. The Emerging Space encompasses the broader spectrum of these applications, the providers of foundation models, and the infrastructure supporting the technology.

Graph databases & analytics

Graph database & analytics startups are developing platforms which provide for the detection, analysis, and storage of complex patterns of relationships between data elements. Though graph capabilities have existed in various forms for decades, increased experience, platform innovation, and accelerated usage of AI have all increased the importance of graph technologies. Offerings in this space include graph databases, knowledge graphs, metadata aggregation, and various other graph analytics platforms.

High performance computing

High Performance Computing (HPC) refers to the use of powerful processors, networks, and storage systems to solve complex computational problems. HPC systems can process large amounts of data at high speeds, making them essential for scientific research, engineering, and various industries.

Humanoid robotics

Companies specializing in humanoid robotics design and develop robots that mimic human appearance and behavior. They focus on features like bipedal movement, object handling, facial recognition, and interaction. Their interdisciplinary work blends mechanical engineering, computer science, AI, and materials science to build advanced robotic systems.

IoT security

IoT Security includes platforms that are designed to safeguard connected devices and networks. Platforms in this space increase the visibility of distributed assets and enable security policy enforcement at the network level.

LiDAR

LiDAR is a surveying method that measures distance by sending out beams of laser light and measuring the reflections with a sensor. Autonomous vehicles are a key end-market use case for this technology.

LLM Agents

LLM agents are advanced artificial intelligence systems that leverage large language models to understand complex instructions, formulate plans, and execute diverse tasks. These agents can break down complex problems, interact with external tools, adapt to new information, and maintain context across interactions, offering significant potential for enhancing productivity and streamlining operations across various industries.

Low code / No code

Low-code and no-code development platforms expedite the creation of new applications with minimal coding requirements and offer tools for non-programmers to create their own apps. These platforms use a combination of “drag and drop” graphical interfaces and prebuilt models and templates that enable non-developers to create software.

Next-gen network security

Next-gen network security encompasses software-based secure networks that protect expanding enterprise perimeters. Companies in this space develop platforms for software-defined wide-area networking security, browser isolation and secure web gateways.

Passwordless authentication

Passwordless Authentication describes an authentication method whereby a user is able to access secured information without entering or remembering a password other knowledge-based factor. This technology works via public-key cryptography, enabling enhanced security by relying on more secure authentication factors (such as biometrics) while simultaneously improving convenience by providing a frictionless login experience. The growing prevalence of account takeover attacks and enterprise-level data breaches are forcing companies to re-assess their security strategy.

Post-quantum cryptography

Post-quantum cryptography (PQC) refers to techniques using software algorithms to encrypt messages on a classical computer in a manner that is resistant to being broken by quantum computers. Companies in this space develop software and devices with encryption protocols that do not rely on the use of discrete logarithms. This includes companies developing lattice-based cryptography, hash-based schemes, multivariate cryptography and code-based cryptography, as well as companies advising on PQC solutions.

Quantum computing

Quantum computers utilize quantum-mechanical phenomenon to encode information into quantum states and process vast numbers of calculations simultaneously. Companies in this space develop and produce quantum computers, components and related emerging technologies.

Quantum sensing

Quantum sensing refers to the technique of using quantum properties and phenomena to measure physical quantities with exceptional precision and accuracy. This approach exploits the inherent sensitivity of quantum systems to environmental changes, enabling the detection of subtle variations that are often undetectable by conventional sensors. Quantum sensing is applicable in various fields, including navigation, telecommunications, and scientific research, where precise measurements are crucial.

Robotic process automation

Robotic process automation is when an algorithm or computer software performs actions usually carried out by a human to complete rule-based tasks.

Security orchestration, automation, and response (SOAR)

SOAR platforms utilize disparate technologies to gather data and security alerts from different sources and automate responses to security log data to remediate breaches. SOAR replaces slow, manual analyst intervention in conventional incident response processes with machine-speed decision making.

Service mesh

Service mesh is a software infrastructure solution that allows firms—who face increasing complexity in monitoring and securing independent services—to better manage microservices.

Silicon photonics

Silicon photonics startups are developing photonic integrated circuits (PICs) which combine both optical and electronic components to enable faster data transmission both between and within microchips. Advancements in Artificial Intelligence (AI) workflows, among other applications, are demanding higher-performance, higher-bandwidth, and higher-speed interconnectivity within and between data centers. Historically, manufacturing challenges have held back the adoption of photonic computing, but recent progress in design automation capabilities and heterogenous packaging has made silicon photonics achievable from both a technical and economic standpoint.

Space situational awareness

Space Situational Awareness (SSA), also known as Space Domain Awareness, is the practice of monitoring, understanding, and predicting the position and movement of objects in Earth's orbit. This is crucial for satellite-dependent applications in communication, navigation, and defense. Companies in this sector develop and provide advanced hardware, software, and services for tracking space objects, assessing collision risks, and ensuring the safety and efficiency of space operations, thereby catering to both national security and commercial needs in an increasingly crowded orbital environment.

Swarm AI

Swarm AI companies algorithmically analyze a group of real-time human inputs to optimize decisions or make predictions. The approach is based on swarm/hive mind behaviors in nature.

Synthetic data

Synthetic data supplements real-world observations with computer-generated outputs programmed to normalize the distribution of datasets. Methods to generate synthetic data include statistical sampling, simulation scenarios, or generative adversarial networks, and can retain multivariate characteristics similar to the source dataset while offering richer metadata and a larger sample size.

Trust & safety tech

Trust & safety tech refers to the suite of technologies and methods designed to protect users on digital platforms from various online harms, including misinformation, fraud, and exploitation. Responding to the dynamic nature of digital threats, this field involves implementing systems for content moderation, age verification, and regulatory compliance to enhance online safety and trustworthiness.

TinyML

TinyML refers to the development of machine learning algorithms capable of performing on-device sensor data analytics at extremely low power. Today, much sensor data is ignored due to cost, bandwidth, or power constraints. Some applications include mobility sensors ingesting real-time traffic data to reduce congestion, monitoring retail shelves and sending immediate alerts for restocking and monitoring livestock health to prevent disease.

V2X

V2X (connected-vehicle-to-everything communication) technologies allow vehicles to communicate with the traffic system around them. It represents the next evolution of autonomous vehicles, where vehicles are not just observing their surrounding environment—but also communicating with it.

Materials & Resources industry sector

Carbon nanotubes

Carbon nanotubes (CNTs) are nanoscale sheets of graphene rolled up into a cylindrical tube. CNTs exhibit remarkable electrical, mechanical, and thermal properties and are considered one of the key materials in nanotechnology.

Cellular agriculture

Cellular agriculture is the production of agriculture products from cell cultures to design and create new methods of producing proteins, fats, and tissues that would otherwise come from traditional agriculture.

Deep sea mining

Deep-sea mining refers to the process where companies explore and extract valuable minerals such as nickel, cobalt, and rare earth metals from the ocean floor, often found in formations called polymetallic nodules. These companies employ specialized technologies, akin to giant underwater vacuum cleaners, to harvest these nodules from depths between 200 and 6,500 meters beneath the ocean surface.

Desalination tech

Desalination technologies focus on increasing efficiency or cost-effectiveness of desalinating ocean water into fresh water. With the increasing scarcity of access to fresh water, desalination technologies may be crucial to supporting populations in drought-prone areas.

Hydrogen storage

The hydrogen storage industry involves the development and implementation of various methods for safely storing hydrogen for use in a range of applications, including fuel cell vehicles, power generation, and industrial processes. Examples of hydrogen storage methods include compression, liquefaction, and solid-state storage technologies such as metal hydrides.

Indoor farming

Indoor farming is the growing of crops or plants—usually on a large scale and using technologies like hydroponics and artificial light—in an enclosed facility. Produce is often stacked vertically to maximize output and the controlled environment means that growing can happen year round. Companies in this space include growers and facilities, makers of the equipment inside and creators of the software to manage them.

Lithium ion battery recycling

Companies in this space are designing technology and processes to more efficiently recycle lithium ion batteries, especially those that are used in electric vehicles. Due to a combination of economic and technical factors, fewer than 5% of Li-ion batteries are recycled today. However, these batteries, which are already fairly ubiquitous in consumer tech, are expected to scale up even more as the electric vehicle market expands, potentially creating both a sustainability and economic opportunity for their recycling.

Livestock health

Livestock health companies support farmers and livestock caretakers through solutions dedicated to animal monitoring, genomics, breeding, feeds and pharmaceuticals.

Mining tech

The Mining Tech space includes companies developing technology to assist with the automation, expediting, and yield of mining processes. As the demand for consumer technologies and renewable energy in particular skyrockets, the need for more resources will put greater demands on mining production. The solutions in this space lean on robotics, artificial intelligence, and digital twins among others in order to help mining companies meet increased demand on resources.

Pollination tech

Pollination tech startups are developing solutions intended to improve the effectiveness of natural pollinators or provide alternatives when natural pollination is not viable. Natural pollination methods, such as by wind and notably by bees, have come under strain due to biodiversity loss and climate change. Companies in this space are focused on improving agricultural yields both by using net new pollination techniques such as robotic pollination and through restoring bee populations and increasing their efficiency.

Reforestation

Startups in this space are focused on developing technologies and providing services related to reforestation and forestry management. The acceleration of both climate change and biodiversity loss has propelled governments and private actors to respond quickly, in this case by restoring and maintaining trees across the world in areas where they once thrived, enabling more species to flourish and carbon to be captured at greater rates. Types of companies in this space include drone-based replanting, satellite and AI-supplemented imaging, and carbon offset programs.

Regenerative Agriculture

Regenerative Agriculture companies are adopting farming and grazing practices that help to reverse climate change by rebuilding soil organic matter and restoring degraded soil biodiversity, in addition to other benefits. Companies in this space primarily develop programs for encouraging farmers, generally through carbon payment systems, to institute regenerative agricultural practices. This space is seeing increased attention as pressure on the agricultural sector grows to reduce its carbon intensive processes.

Smart waste management

Smart waste management companies develop tech-oriented solutions that improve the efficiency and effectiveness of traditional waste management, including waste bins with sensors, database management and logistics platforms, and robots and computer vision systems that sort trash and recycling.