

The Spider And It's Web: A Bio-mimicry Project

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We want to explore into the various methods the spider uses to thrive in it's various habitats. These methods could prove to be very insightful and productive in helping us make a design for bio-mimicry.

Discover the Spider

The Spider is part of the class Arachnida from the Arthropoda Fylum. It has 8 Legs, chelicerae with fangs that can inject venom and spinnerets that extrude silk. It's Body is separated into two parts, the cephalothorax(top part) and the abdomen(bottom part)



The Goliath Bird Eating Spider(right) and The Wolf Spider(Left)

Survival Methods

Although, there are spiders who are non-predatory, majority of spiders are predatory and they mostly hunt using their webs. To defend themselves some spiders enter into a threat display with their legs and fangs, some spiders kick hairs that when inhaled cause respiratory irritation. They are also make webs in different designs like orb and cob.



Pictures of prey caught in a spiders web(Left) and a spider in a threat display(right)

Brainstorm

The design of the Tangle cob web presents an interesting on idea that can be applied in the arrangement of computers in a network. If we consider each point where the silk intersects with another string of silk a grid, then a decentralized grid-like network of nodes emerges. The design of the orb web presents an opportunity to make clothing less resistant to wear and tear also.



Orb Web



A Spider And It's Tangled Cob Web

Emulate

We can look to replicate the form of the web the spider weaves together, for example when trying to solve the problem of decentralization of a compute network, the tangled cob web is the best for this because of it's decentralized nature.

We can also look to emulate process, the spiders intricately build up their webs, in building the tangled web, they use elastic, sticky silk trap lines leading to the top-most part of soil, the webs then remain in place for extended amounts of time.



Tangled Cob Web design(Left) Vs Orb Web Design(right)

Evaluating The Computer Network Idea

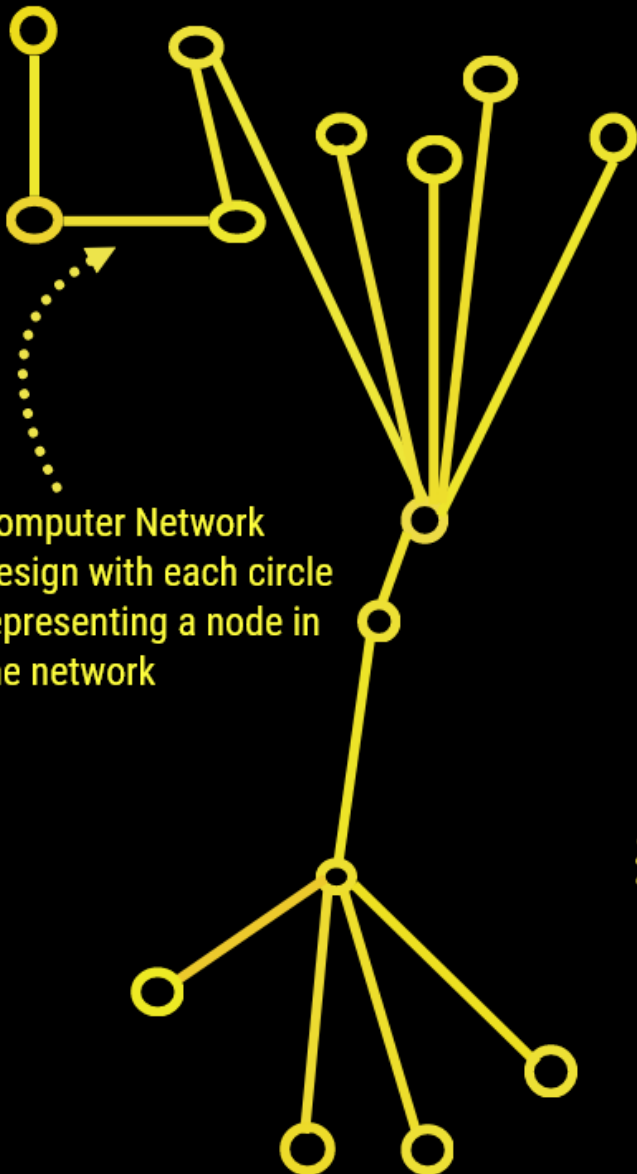
The Computer Network is locally attuned and adaptive because each computer receives and responds to signals sent by other ones in the Network. It is also resource efficient because the power supply will be more distributed in the proposed idea and thus output is increased and input is at the very least manageable and not extreme. The computer design idea is an obscure case in the case of life friendliness, because it is not for certain if it's power supply will gotten from earth friendly ways.



Evaluating the Clothing Design Idea

The same principle in the computer network idea is found here too because clothing design as each thread is dependent on the completion of another, thus the system has to be locally attuned and responsive to achieve the required goal. The idea will be life friendly if earth friendly materials are used to make the clothes. The point curiously of the clothing design is to remain firm and unchanging in response to changing conditions. The incorporation of the orb web making process will allow for this.

Final Design



Computer Network Design with each circle representing a node in the network

A Shirt Made From the design principle of the Orb Web



Lets Zoom In!