

ELECTRA

A newsletter from the Department of Electrical and Electronics Engineering

MISSION

1. Impart state-of-the-art resources that contribute towards excellence in academics.
2. Collaborate with industries, research organizations and premier academic institutions to encourage creativity and innovation.
3. Inculcate moral and ethical values among the students for the betterment of society.

PEO

Graduates of Electrical and Electronics Engineering shall:

PEO 1: Identify, comprehend and solve problems, and adapt to rapidly evolving technology.

PEO 2: Successfully utilize soft skills, multi-disciplinary approach and leadership qualities to excel in the professional career.

PEO 3: Work in teams with integrity and ethical values to provide technically feasible, economically viable and socially relevant solutions.

VISION

To produce globally competent and socially committed Electrical and Electronics Engineers contributing value to the knowledge-based economy and society

NEURALINK – SKYNET MADE REAL

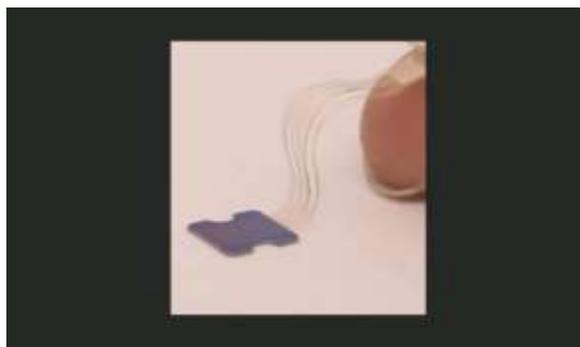
Mr. Joel Manuel, S3 EEE

2020 was a great year for technological advancements. Especially the one Elon Musk's been working on for years. Remember Skynet from Terminator which is a fictional artificial Neural Network – based Intelligent system? Elon Musk's been working on something similar to that. Not to take over the world but to make the world a better place.

He's building technology that will allow humans to access more of their brain functions and he's achieving this through NeuraLink – A company dedicated in developing interfaces between brains and machines. So Why do we think this is possible in this era? Well futurists like Ray Kurzweil, the author of “The Age of Intelligent Machines (1990)”, have been talking about this for decades. He calls it “Singularity”, the platform where Humans and machines merge. According to him, in a couple of decades or so, the convergence between Humans and machines will be inevitable and Elon Musk might just play the significant role.

For those who are uninitiated, Ray Kurzweil in 1990, predicted that internet would become the defining consumer technology of our generation and that seemed like crazy talk. For good measure, he even predicted the rise of cell phones and people reading out their peers with a tap of a button and they all came true.

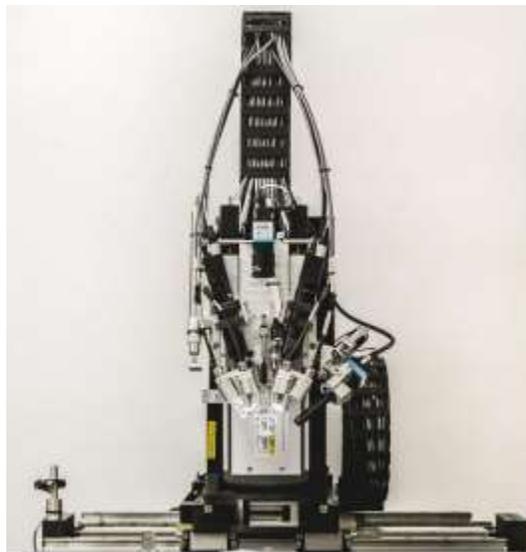
So how does Elon's tech work? Our sensory and motor functions are controlled by a series of electrochemical spikes in the brain. As neurons fire across our synapses, they send complex commands to our eyes, ears and limbs. Musk and his team at Neuralink want to build a brain-machine interface that interprets and controls those commands.



The Size of threads (Fingertip for Scale)

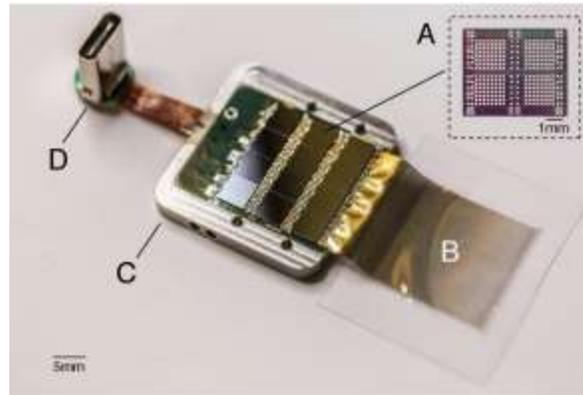
The first big advance are flexible “Threads”, which are less likely to damage the brain than the materials that are currently being used in Brain-Machine interfaces. These threads, given their structure also create the possibility of transferring a higher volume of data which according to abstract notes is around “as many as 3,072 electrodes per array distributed across 96 threads.”

The threads themselves are around 4 to 6 μm in width, which makes considerably much thinner than a human hair. The other big advancement is a machine that embeds them without human aid. Elon gave a big presentation in late 2019 about how the tech could be a game changer. For those questioning the possibility of such a vast idea, its not as far fetched as it seems. The basic technology already exists. Dr. Richard Norman, a bio-engineering professor at Utah developed the Utah array in 1997 which was a tiny piece of silicon with 256 electrodes that could be attached to the Central Nervous System to listen to neural activity. Patients with these devices were able to communicate with computers via their brains. Since then, the implants have only developed. Take Dr. Stephen Hawking for instance.



NeuraLink’s machine for inserting the threads.

According to the researchers at NeuraLink, the finished chips will have around 1,000 threads. A single application might have around 10 threads. Utah Array can only communicate to computers with only 256 electrodes. One can just imagine the bounds with 10,000.



The actual chip that amplifies the signal and sends it to a computer.

So, who are the ones who'll be benefited with this Sci-Fi tech? The ultimate goal of this company is amidst paralyzed humans, allowing them to control phones or computers and paving a way for them to lead a normal life and carry day to day tasks without the aid of the others.

In the future, Musk says the procedure will be no more invasive than a Lasik Eye Surgery and the mandatory requirements involve wireless, practical amount of bandwidth and years of viability. His long-term goals may stretch beyond helping individuals with disabilities.

This idea has been fairly considered by other noted thinkers like Bill Gates and the late Astrophysicist Stephen Hawking. Neuralink believes that the solution lies in designing an implant designed to use the full capacity of our brains. In his view, this might even eliminate the threat of AIs taking over, since we would merge with them.



LUMINA ACTIVITIES



ALBERTIAN INSTITUTE OF SCIENCE AND TECHNOLOGY

Organised by the Department of Electrical and Electronics Engineering
in association with SEEM and IEDC

AISE' 21 **B.TECH PROJECT COMPETITION**

GRAND FINALE

JUDGING PANEL



DR. JAYARAMAN C
FORMER GENERAL SECRETARY
SEEM



DR. ASHA E DANIEL
PROFESSOR
EEE Dept., CUSAT



DR. LINSS T ALEX
ASSOCIATE PROFESSOR
EEE Dept., AISAT



17 AUGUST 2021
10:00 AM

**SCAN QR CODE
TO JOIN**



FACULTY LECTURE SERIES



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Approved by AICTE, Affiliated to KTU, ISO 9001: 2015 CERTIFIED, TÜVRheinland

 **FACULTY LECTURE SERIES**

DEPARTMENT OF EEE PRESENTS

AN INTRODUCTION TO OPTIMAL CONTROL

Maria Philip

*Assistant Professor
Dept. of EEE
AISAT*



06 JULY
2021

**Tuesday
3 : 00 PM**

*Targeted audience:
Open to all faculty of EEE*



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FACULTY LECTURE SERIES

DEPARTMENT OF EEE PRESENTS

RECENT ADVANCES IN TRANSMISSION INSULATORS

Ms. Nirma Peter

*Assistant Professor
Dept. of EEE
AISAT*



**17 JULY
2021**

**Saturday
3 : 00 PM**

*Targeted audience:
Open to all faculty*

STUDENT ACHIEVEMENTS



ALBERTIAN INSTITUTE OF SCIENCE AND TECHNOLOGY
AN UNDERTAKING OF THE ARCHDIOCESE OF VERAPOLY

B.Tech Degree Examination

Class Toppers (Batch 2017-2021)

 Ashna Jose CGPA - 8.88	 Eaison MT CGPA - 7.89	 Anu Antony CGPA - 7.85	 Rameesa O A CGPA - 7.65
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Department of Electrical & Electronics Engineering

 www.aisat.ac.in

- Sona Elsa Abraham of Batch 2020-2024 participated in python and Data Analytics, 7days boot camp organized by shape ai
- Sona Elsa Abraham of Batch 2020-2024 participated in Javascript & ReactJS, 7days boot camp organized by shape ai
- Sona Elsa Abraham of Batch 2020-2024 participated in cyber security, 7days boot camp organized by shape ai
- Ajmal Sudhir of Batch 2020-24 participated in Online Tricolour Painting Competition 'KALAATMAKATA' organized by NSS AISAT on 26th January 2022
- ANN MARY C.A of Batch 2020-2024 participated in python and Data Analytics, 7days boot camp organized by shape.ai
- ANN MARY C.A of Batch 2020-2024 participated in Javascript & ReactJS, 7days boot camp organized by shape.ai

- ANN MARY C.A of Batch 2020-2024 participated in cyber security, 7days boot camp organized by shape.ai
- ANN MARY C.A of Batch 2020-2024 participated in Data Analytics and Dashboard with Excel, 7days boot camp organized by shape.ai
- ANN MARY C.A of Batch 2020-2024 participated in Open source tool workshop conducted by CSE & in association with ICFOSS & CSI on 5 th june
- ANN MARY C.A of Batch 2020-2024 secured 2nd position on Doodle-A-Art in connection with Environmental day held on 5 th june organized by IEEE women in engineering AG chandigarh university
- ANN MARY C.A of Batch 2020-2024 completed Introduction to data science course on Cognitiveclass.ai Organized by IBM developers skills Network issued on September 30 th
- ANN MARY C.A of Batch 2020-2024 received Certificate of scholarship attained On attending in 27 th WITIs Annual Global summit held virtually between june 22 & 24
- Ishan P Seban of batch 2020-24 qualified round one of national engineering olympiad 5.0 conducted in December 2021

FACULTY ACHIEVEMENTS

- Prof. Nirma Peter received Active SPOC Award from NPTEL.
- Prof. Dr. Linss T Alex received an **Australian Patent** for the invention Phrase Search over Secured IoT based e healthcare diagnosis system in December 2021

PLACEMENT ACHIEVEMENTS



EDITORIAL BOARD

Prof. Treasa Sebastian

(Faculty Coordinator)

Alma Tresa Paul, S7 EEE