



CLTP13 Experience

Prof. dr Amila Akagic

The 49th Virtual UNISEC-Global Meeting Timetable
October 19th, 2024

Little bit about my education...

- I received Bachelor's and Master's Degrees from the University of Sarajevo in Electrical Engineering within Computer Science and Informatics Department in 2006, 2009, respectively.
- In the academic year 2007/2008, I received Fulbright Visiting Student Award and joined Embedded Systems and Architectures Lab at University California, Riverside as a Junior Researcher.

- In 2010, I joined the Amano Lab and spend 3 and a half years in Tokyo, where I completed Ph.D. studies at Keio University in 2013.



Acceleration of applications with hardware (Keywords: Zynq, FPGA, GPU-BOX)



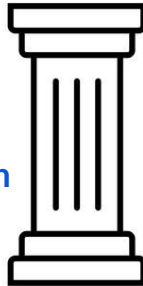
Current work

- I'm currently Associate Professor at ETF, Computer Science and Informatics Department.
- I teach following courses:
 - ◆ Artificial Intelligence (80-100 students)
 - ◆ Methods and Applications of Artificial Intelligence (60-80 students)
 - ◆ Hardware/Software Co-Design (10-15 students)
 - ◆ Digital Signal Processing (20 students)
 - ◆ Design and Synthesis of Digital Systems (10 students)
 - ◆ Design and Architecture of Software Systems (20-30 students)



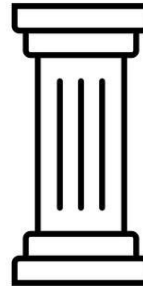
Signal processing

- Image processing
- Image segmentation



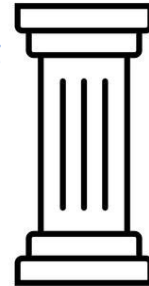
Computer Architecture

- VHDL Design
- Application Acceleration
- OpenCL
- OpenVINO



AI

- Machine Learning
- Deep Learning
- Computer Vision
- Natural Language Processing



Bosnia and Herzegovina



Bosnia and Herzegovina

Mostar



Waterfall Kravice



Sarajevo



Čvrsnica Mountain



Buna



CLTP13

CLTP13

Class of 2024



[Learn about HEPTA-Sat >](#)

1. Date

Online Course: July to August, 2024 (TBC)
August 19(Mon) - 29(Thu), 2024

2. Venue

Nihon University (Chiba, Japan)

3. Eligibility

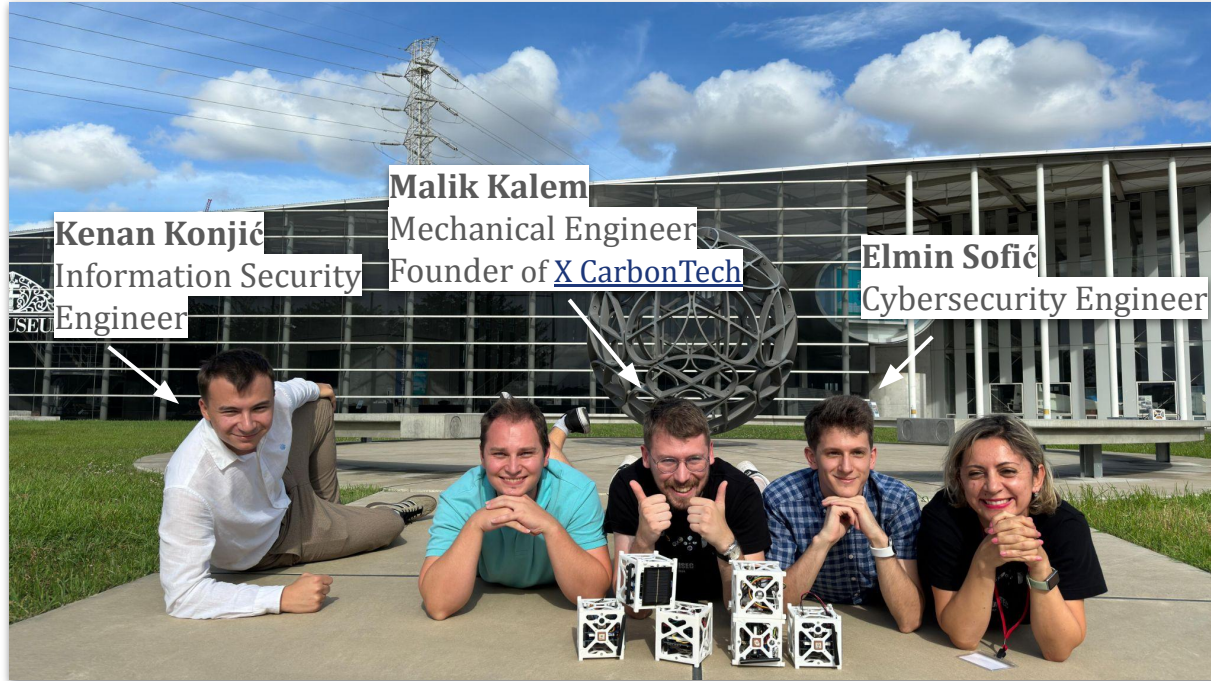
Academic researchers, instructors, and graduate students at home and abroad who belong to universities or research institutes. A Ph.D. degree holder is preferable.
Company employees who wants to use CLTP as an education and training program.

CLTP11 August 17 - August 31, 2022



Kerim Hadzic

CLTP13 & Bosnia and Herzegovina



CLTP Training

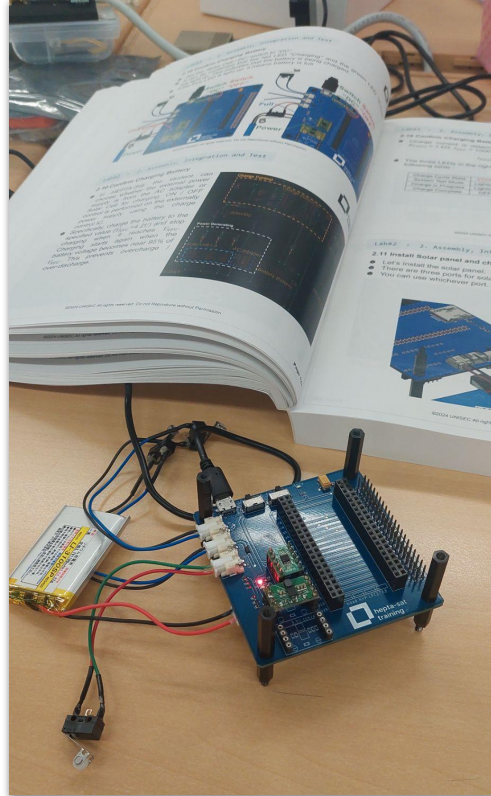
Aug 19th
Briefing and
Introduction to
CLTP



CLTP Training

Aug 19th
Briefing and
Introduction to
CLTP

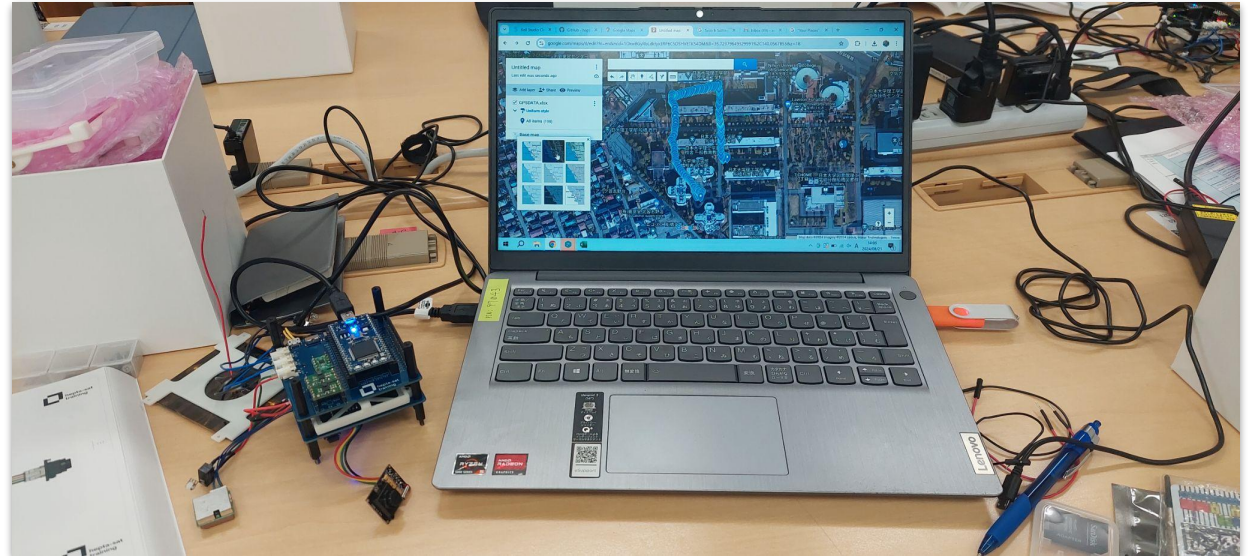
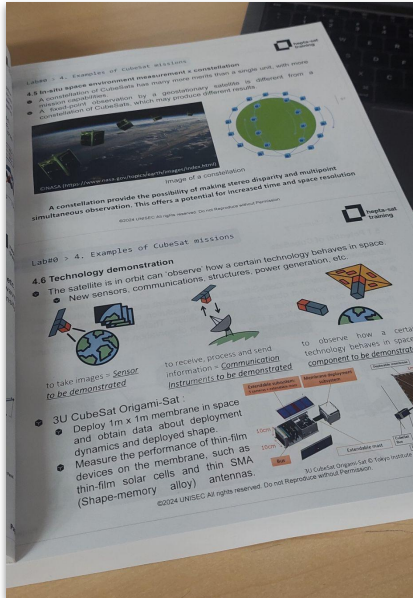
- Self-Introduction
- Team building
- Nihon University Tour



CLTP Training

Aug 19th
Briefing and
Introduction to
CLTP

Aug 20th
Lab#0 - Lab#4

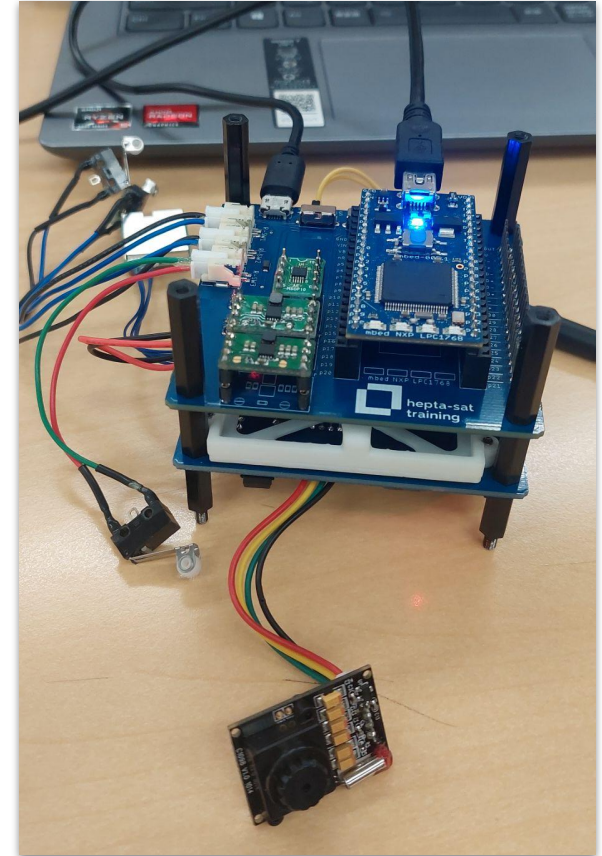
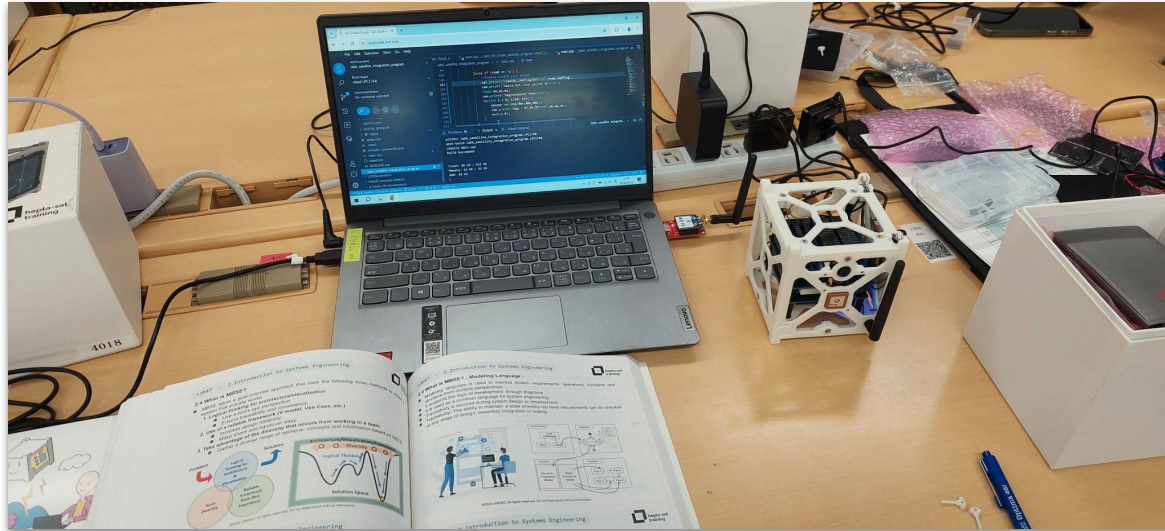


CLTP Training

Aug 19th
Briefing and
Introduction to
CLTP

Aug 20th
Lab#0 - Lab#4

Aug 21th
Lab#5 - Lab#6



CLTP Training



Aug 19th
Briefing and
Introduction to
CLTP

Aug 20th
Lab#0 - Lab#4

Aug 21th
Lab#5 - Lab#6

Aug 22th
Lab#7

Aug 23th
Mission Design

Aug 24th
Akihabara Tour
+ procurement
of parts

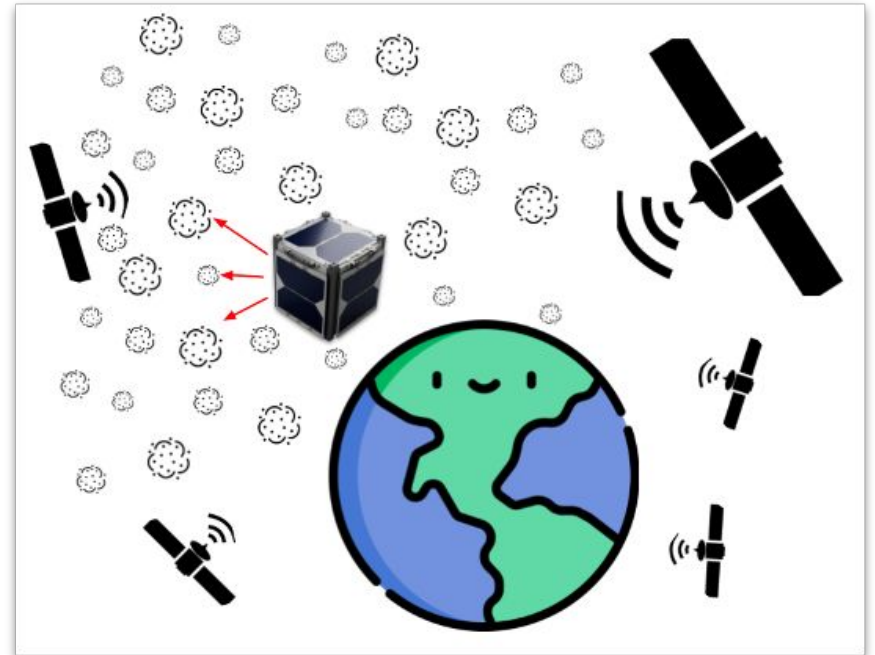
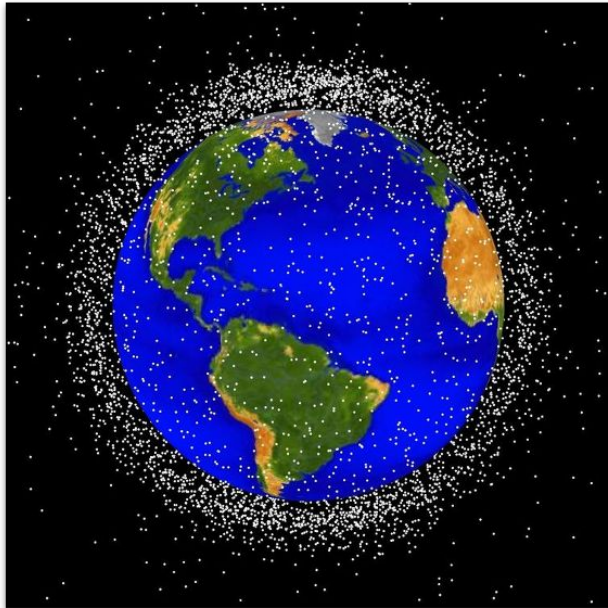
Aug 25th
Self Study Day

Aug 26th
Mission Design
&
Implementation

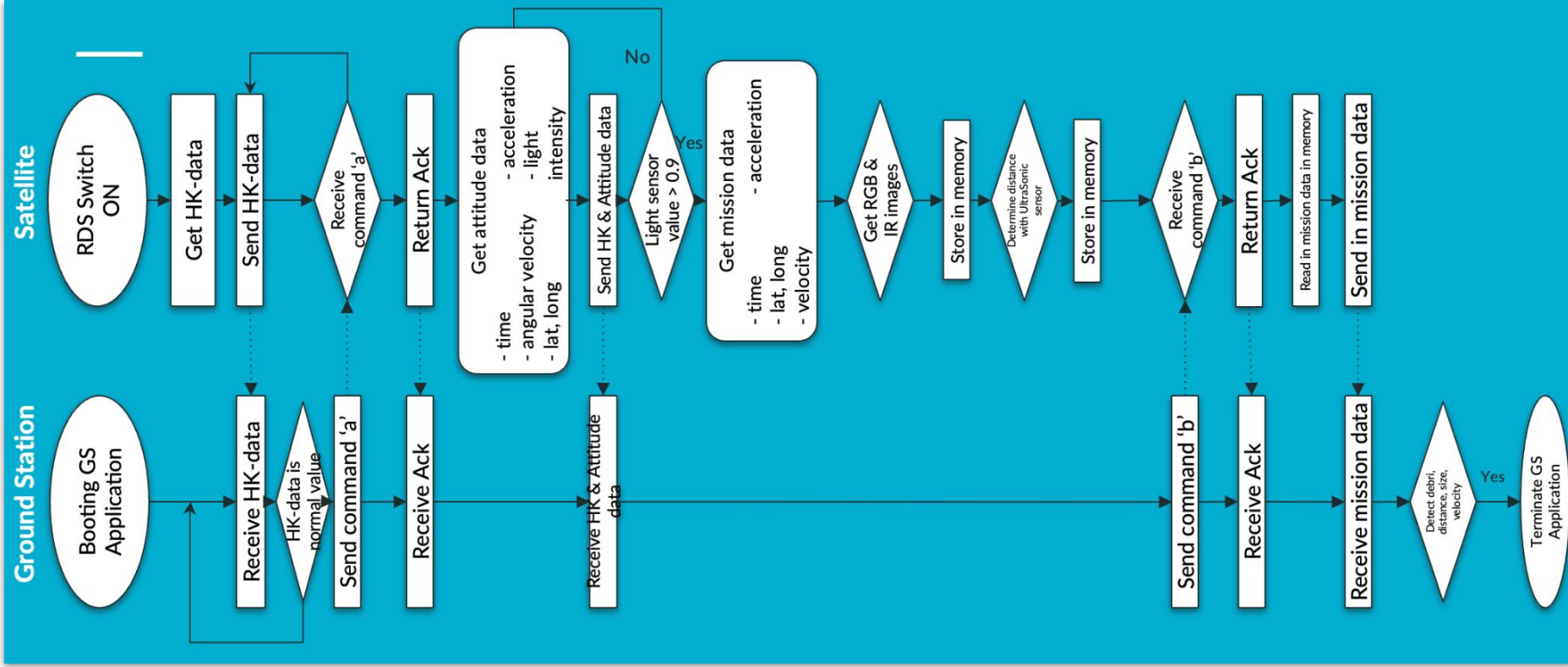
Aug 27th
Mission
Presentation

CLTP Training: Our Mission

- [GS-1] Detecting space debris and finding its size, location and velocities.
- [GS-2] Sending this data to Ground Station for further processing.

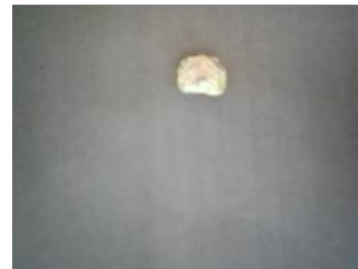


CLTP Training: Our Mission



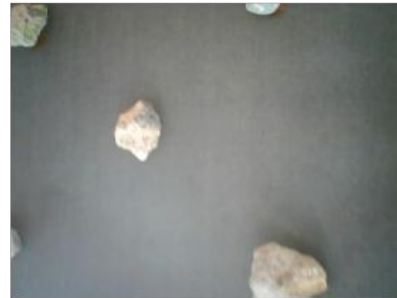
CLTP Training: Our Mission

Dataset 1

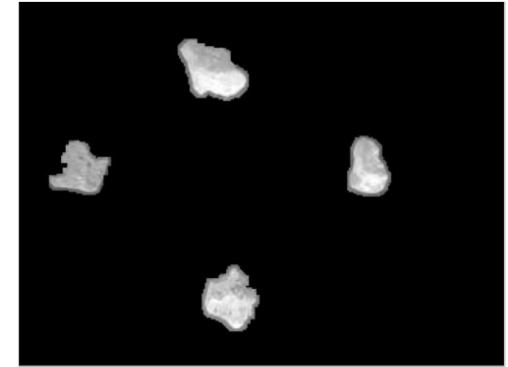
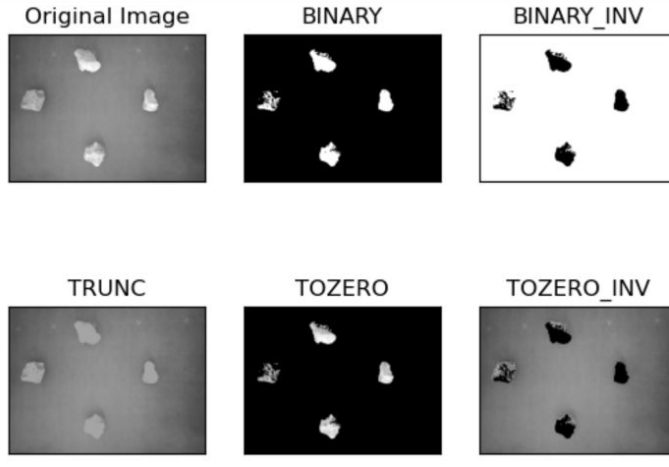
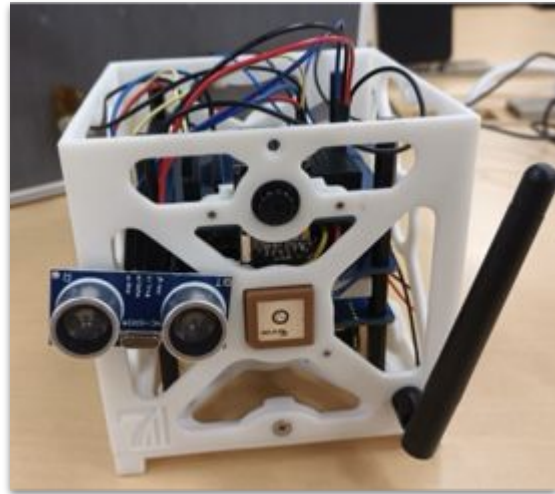


CLTP Training: Our Mission

Dataset 2



CLTP Training: Our Mission



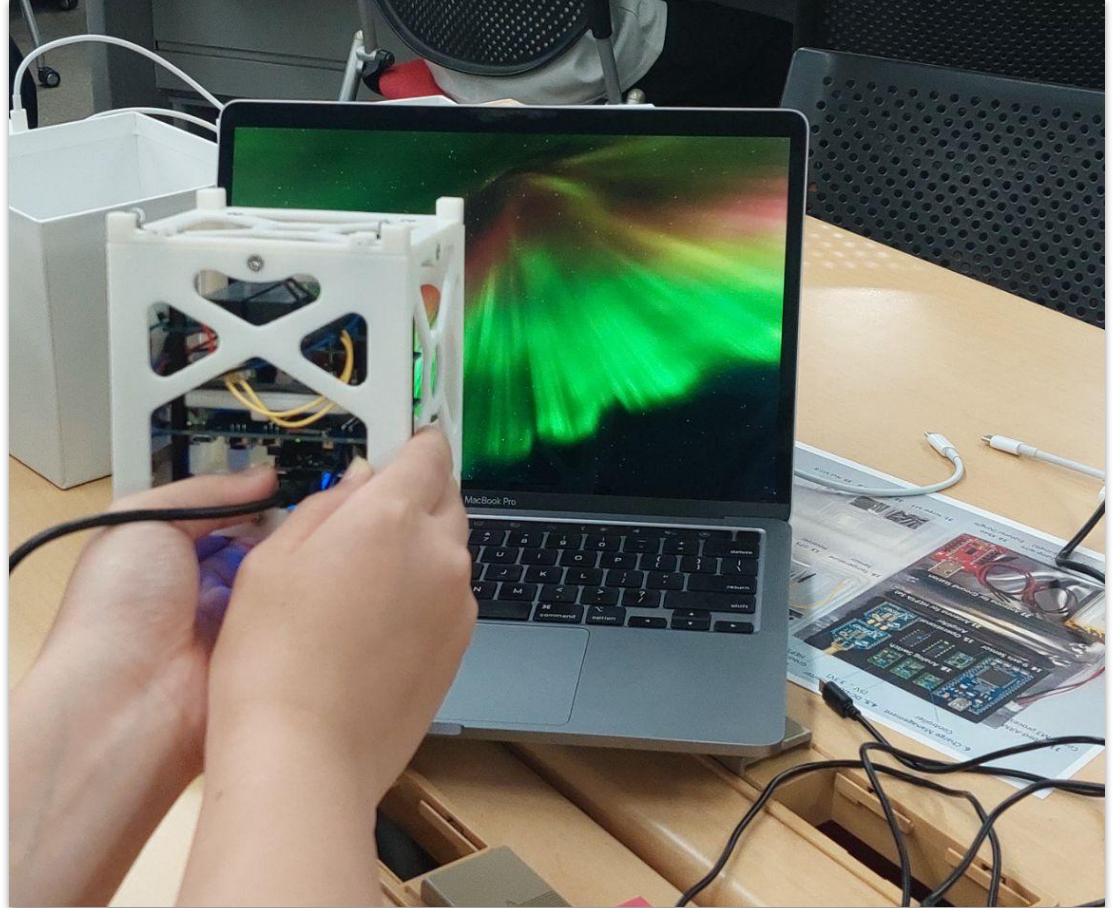
Number of pixels in entire image: 76800
Number of pixels in debris: 2825

3.67%

CLTP: Teaching practice

Aug 28-29th
Teaching
practice

The goal of the teaching practice was to educate 22 Japanese students to assemble the cube in two days.



My Vision of the future

- ❑ Contribute to the advancement of CubeSat technology by integrating **innovative design methodologies** and **fostering international collaboration**.
- ❑ Tackle the complex challenges of space exploration, developing missions that address critical issues such as **environmental monitoring**, **disaster response**, and **scientific research**.
- ❑ Ultimately, **I would like see CubeSats using AI** to address some of the challenges we have in space.

The End

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Google Scholar: <https://scholar.google.com/citations?user=zHE5tRMAAAAJ&hl=en&oi=ao>

Home page: <https://people.etf.unsa.ba/~aakagic/>

ResearchGate: <https://www.researchgate.net/profile/Amila-Akagic>

LinkedIn: <https://www.linkedin.com/in/aakagic/>



THANK
You!