The PNST Opportunity and Experience

PNST/SEIC Program

By

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Outline

❖ Home country - Kenya
❖ Pre-PNST
❖ PNST Experience & Life in Japan
❖ Post-PNST
Kenya

In East Africa

- Population: 55 million
- GDP: 110 billion USD

What is Kenya famous for?
- the world's best safari destination
- tea, coffee, long-distance runners

Eliud Kipchoge: 1st & only human to run marathon under 2 hrs

Barrack Obama: Kenyan father

Rishi Sunak: father (Yashvir) born and raised in Kenya

But...Some interesting tidbits involving Kenya

Queen Elizabeth II: Became queen while in Kenya, Feb 1952
Education Background (University of Nairobi)
- BSc. Electrical & Electronics Engineering (2009 – 2014)
- Supervisor & mentor: Prof. Eng. Mwangi Mbuthia

University of Nairobi
- Oldest and largest in Kenya
- Student Population: > 40,000

Dept. of Electrical & Information Engineering
1KUNS Satellite Project
- 1st Kenyan University Nano Satellite (1KUNS)
- Collaboration: UoN & University of Rome, Sapienza
  - P.Is: Prof. Mwangi Mbuthia, Prof. Fabio Santoni
- 1st Beneficiary of Japanese KiboCUBE Launch Opportunity
- Deployed from International Space Station in May 2018

Prof. Mbuthia receives the KiboCUBE Launch Award (Mexico, 2016)

University of Nairobi & University of Rome, Sapienza students (2016-2017)
Awarded PNST PhD Fellowship 2017
- Under the Space Engineering International Course (SEIC)
- Based in Embedded Systems Lab, under Prof. Kenichi Asami
- Research area: FPGA-based inference / accelerators

26/09/2017 – Arrival in Japan (Fukuoka Airport)

Arrival at my apartment

Welcome Party – Embedded systems lab
Satellite projects
- Tenkoh – Electrical Power Subsystem
- Kitsune – Main Bus (and Mobile GS)
❖ Other opportunities

✓ Nov 2018: UNISEC-Global MIC

WINNERS
1st Place
Small-sat Ionosphere Exploration at Several Times and Altitudes.
William Evonosky, Duann Yi, Kandi Anand Kaustubh University of Colorado Boulder, National Central University, IIST

2nd Place
And and Semi-Arid Lands Satellite (ASAL-SAT): A LoRa ground sensor network for easing life in Sub-Saharan Africa ASAL areas.
Kiriki Cosmas Kyushu Institute of Technology

❖ Japan Life in Pictures

Tokyo Skytree
Post-PNST

- Lecturer, Dept Electrical & Information Engineering, UoN
  - Project Manager - NaSPUoN Nanosatellite Project (Sept 2020 – Nov 2021)
  - Asst. Principal Investigator - Tafiti Nanosatellite Project (Jan 2022 - present)

Kenya Space Expo & Conference 2022
Conclusion

❖ PNST: Life-changing opportunity
✓ Technical capacity building
✓ Global exposure & experience
✓ Networking
✓ Academic & professional growth