

UGM Students Win National Competition for Health Apps Innovation

Wednesday, 08 May 2019 WIB, By: Marwati



A student team from UGM have won the *3rd Open Innovation IMERI FKUI 2019*, a competition in medicine organised by Faculty of Medicine University of Indonesia from 27-28 April 2019 in Jakarta.

The achievement was made for their innovation called as *Hematobot*, a real-time application based on artificial intelligence to assist hematologists in analysing cancer cells in patients having leukemia.


“This is actually a research done by Nuclear Engineering Department and Engineering Physics Department in medical instrumentation and physics,” said Bimantara Hanumpraja, Physics Engineering student class of 2015. He went to this competition along with fellow students, Ilham Zulfikri Firdaus and Ayu Ariningsih.

He explained during this time when analysing cancer cells, hematologists had to do a manual calculation of the white blood cells. At Dr Sardjito General Hospital Yogyakarta, for instance, it took the hematologists up to 3 hours to observe each preparate under the microscope while they had to analyse 5 preparates per day. This had caused fatigue among them that often led to human error by as much as 30-40%.

The *Hematobot* app uses the deep learning method, or Convolutional Neural Network to process information in the form of image obtained from the camera that is installed on the lense of ocular microscope. The app is easy to use on Android smartphones.

“If this innovation is developed into a product that’s usable by many people, it’s better. So, we will develop this as a step to help advance Indonesia’s economy in the digital era as well as giving solution to hematologic discipline,” said Bimantara.

Currently, the application is able to classify types of leukocytes in leukemia type ALL-L1. The *Hematobot* team is trying to improve the app algorithmic abilities so that it can classify other types such as AML, CLL, and CML.



The team will also develop the automatic counter to calculate each white blood cell automatically. Furthermore, the team will establish a startup in medical realm to benefit the general public.

“Going forward, we will develop this product to classify more types of leukemia to be detected, the platforms to use the *Hematobot* app, or the startup,” he said.

Open Innovation IMERI FKUI is an interdisciplinary competition to give solution to problems in medical world. In its third running, it was followed by 85 teams from academics and practitioners throughout Indonesia. After proposal selection, as many as 30 teams went through to the final that was being held from 27-28 April 2019 in Jakarta.

Related News

- [UGM Students Winner of SCIFI NEUTRON 2019](#)
- [UGM Wins National Debating Competition](#)
- [UGM Students Win National Competition for Health Apps Innovation](#)
- [UGM Students Win 3 International Awards for Health Tools for Children with Asthma](#)
- [UGM Students Win Innovation Debate Competition](#)