

# RESEARCH CENTER FOR ARTIFICIAL INTELLIGENCE

## SMART CITY LAB



### NEWSLETTER

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### About Us:

The Research Center for Artificial Intelligence (RCAI) is an initiative towards creating a research-based environment. The center is designed to facilitate researchers to bring innovation.

The Smart City Lab at RCAI in NED University of Engineering and Technology is working to provide solutions to the most commonly faced problems of the people. The AI Engineers and Data Scientists in the research laboratory are working together on traffic management, waste management, crowd management and on other domains to provide a better environment to the citizens.

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### Secure App to spot fake goods

The growing menace of counterfeit products has become a serious problem for producers and buyers of fast-moving consumer goods. According to the statistics over 30% of the cosmetics, drugs, fragrances and toiletries are counterfeited. According to an international report, 65% of consumer products sold in Pakistan are fake.

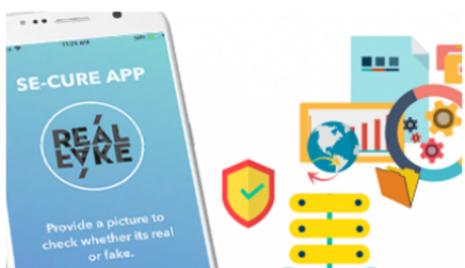
The Smart City Lab has successfully developed Secure App to solve the problem of counterfeit goods. The application uses artificial intelligence to inform the users about the product by scanning the logo on the product which is genuine or fake.

This application is designed to solve most commonly faced problems of the people by informing them about the counterfeit medicines, clothes, foods etc. The application will protect consumers health and maintain their trust on brands. Brands will also get aware of their counterfeits.

### Secure App got covered by the media

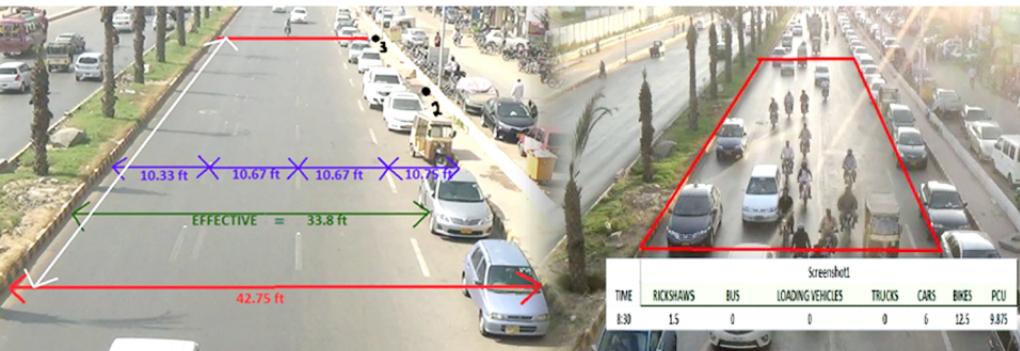
Secure App was covered by various news channels. Sundus Fatima, Research Associate and Co-founder of Secure App was invited by the broadcast media on morning shows to discuss about the achievement.

During the interview, the anchors were interested to know about how the application will solve the problem of counterfeit products and how the RCAI team will form partnership; which sector will benefit the most from the "Secure App. Many articles on Secure App explaining about its features and benefits were also published on the newspapers and websites.



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## Impacts of Traffic Congestion

The team at the Smart City Lab conducted a detailed research on how traffic congestion financially affects an economy. They installed cameras on one of the busiest roads in Karachi – University Road – and visually observed the vicinity. The purpose was to calculate the difference between how much fuel vehicles consume during high traffic hours and how much do they consume during low traffic hours. It was found that vehicles consume twice as much fuel during high traffic hours, than what they do in low traffic hours.

The team also calculated the cost spent on reducing the emissions and other environment protection schemes. To calculate the cost spent, the team targeted the same road, and studied how much cost is spent to make the environment better of that particular vicinity.

The purpose of the research was to highlight the fallouts of traffic congestion, especially those related to health and economy. The findings were that the estimated cost of fuel consumed due to 10 minutes delay could be around 22.90 Million PKR/Year. The cost to overcome CO<sub>2</sub> emissions by planting pine trees, could be around 37.73 Million PKR/Year.

Considering the research targeting the University Road, the team has made an estimate loss that could be cost because of traffic congestion in the city. They have found that the total loss cost due to congestion is 95.6 Billion PKR/Year for 15 minutes delay in Karachi. The estimation is based on also the report studied by the World Bank. According to the report, the health cost of ambient air pollution alone is 65 billion PKR/ Year.



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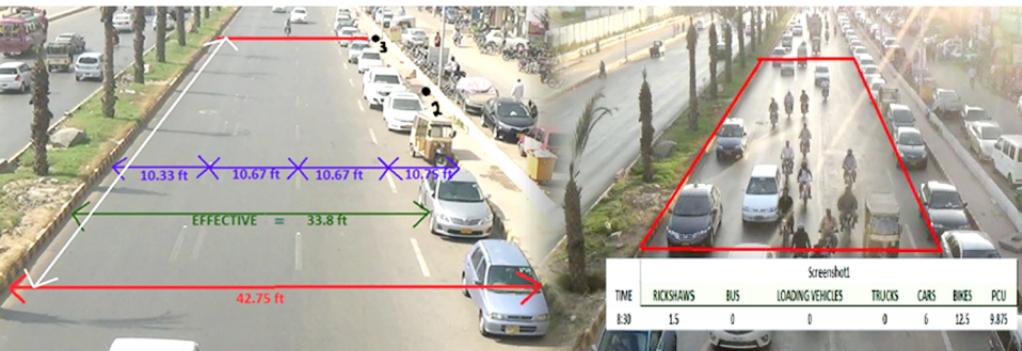
### RCAI Talent Hunt

Artificial Intelligence is getting more powerful with time. The future of a digital world is based on AI and Big Data. To train the students and to provide them experience of working on this technology, the lab has organized the training program. The RCAI talent hunt, is an opportunity for the students who want to work on Machine Learning and Deep Learning. Around twenty-three interns got selected in the first batch. These interns are eager to learn the new technology. The six weeks internship will help to develop the skills of the interns. There are different group of interns who are working on different projects guided by the supervisors. These aspiring individuals are working on projects for health, environment and management.



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Considering the research targeting the University Road, the team has made an estimate loss that could be cost because of traffic congestion in the city. They have found that the total loss cost due to congestion is 95.62 Billion PKR/Year for 15 minutes delay in Karachi. The estimation is based on also the report studied by the World Bank. According to the report, the health cost of ambient air pollution alone is 65 billion PKR/ Year.



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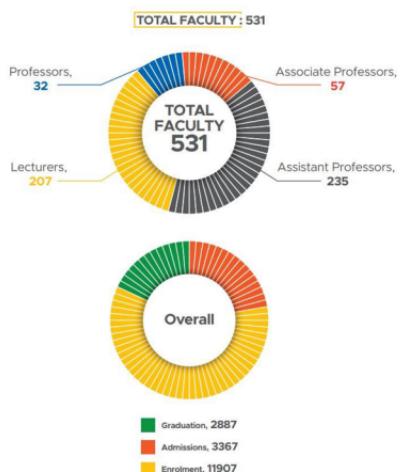


### Green Space Analysis for NED

Green space is important for a healthy environment as it improves the quality of life of the people. To live in a green and healthy environment, it is important to know that how much trees should be required. The team at the Smart City Lab did a research study on the green space at NED UET. During the research, the team found the total area of NED University which is 469435 sq. m. (116 acres).

According to the annual report of NED UET 2019, the total population of NED University is found to be 12438. The team compared the statistics with the study of World Health Organization, according to which the minimum benchmark of Green Space per person is 9 sq. m.

According to the facts, the current green space area of NED is 105218 sq. m. Green Space required for NED's population is approximately 130000 sq. m. Therefore, the team found that by converting an area of around 24782 sq. m. (6.12 acres) into a green space will make the environment healthier.



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### Meetings



A meeting with the media person for publicizing some interesting projects of the Smart City Lab.

A UK based educational delegation visited the Smart City Lab and appreciated the projects developed by our team members.



The faculty of Dawood University of Engineering and Technology (DUET) visited the Smart City Lab. Business Development Manager, Bariya Faizan from our team explained about the current projects of the lab.

