

ENGINEERING THE FUTURE

by Gerhard Hancke



The proof of the pudding lies in the eating, as is illustrated by the annual project presentations of the University of Pretoria's Department of Electrical, Electronic and Computer Engineering. These presentations involve final-year students from the different disciplines, and the Department has delivered several top achievers to date. Last year, members from industry and visitors from China attended the event.

Final-year computer engineering student, Eben de Lange, who received the award for the best final-year project with hardware emphasis, illustrated the universal applications of computer engineering with his exploration of the way in which blood is presently being stored and transported by the South African Blood Bank. With a temperature sensor, the temperature of the blood can, for example, be monitored during the critical transportation phase.

Added to this, when a small radio frequency identification device (RFID) – containing the patient's medical background – is attached to the patient's arm, it could prove to be a huge help to nursing personnel and ensure that the patient receives the correct blood type during a blood transfusion. An alarm is triggered if the wrong blood type is transfused. If worn proactively, it could also assist emergency personnel on the scene of an accident.

The runner-up in this category, with a project that examined the design of a two-dimensional helicopter control experiment, was electronic engineering student Jacobus Heukelman.

In the category for software applications, the winner was final-year electronic engineering student, Daniel Basilio, for his project on the design of a code position modulation system employing complex spreading sequences. The runner-up in this category was Kirsty Ried, a computer engineering student, with her project on the optimisation of the RSA decryption algorithm for resource-constrained electronic devices. 📍

→ Final-year students in the University's Department of Electrical, Electronic and Computer Engineering at the annual project presentations of the Department.

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