Editorial Note

The last several decades have witnessed major progress in many branches of science. From the advances in astronomy where we can now see 400 exoplanets to bio-mechanical engineering where humans meld with machines, new scientific findings and discoveries have undoubtedly helped answer fundamental questions and solved basic human problems. In the area of medical science, researchers are pushing the boundaries of solutions and treatments for the many outstanding diseases (including cancer and AIDS) by making use the clues from the complete mappings of human genome. Meanwhile, in recent years, researchers have successfully implanted electrodes in monkeys' brains and then trained them to reach for food using a robotic arm. Such a neurochip could one day restore motor function in paralyzed patients. The important keywords are multi-disciplinary study and fusion among technology areas. It is with this spirit that we invite, review and publish select papers from different areas.

The first paper by Haley et al. presents 3D tunnel mapping using an autonomous ground vehicle and a single Microsoft Kinect sensor. The power requirements for both the vehicle locomotion and onboard computation are assessed, and representative tunnel mapping ranges are computed. A prototype system is proposed that minimizes power consumption without sacrificing map quality that could operate continuously for 26 hours and collect map data, which could be processed online for real-time mapping and refined offline for more accurate results. The authors also consider extension of the application to Unmanned Aerial Vehicle/Unmanned Ground Vehicle teams.

The second brief paper is focused on the study of the correlation of Treg Cells (CD4+CD25+) with viral load between HIV patients and TB-HIV patients. As part of the research study, the number of Tregs (CD4+CD25+) was assessed by flowcytometer (FACS), viral load was done by measuring HIV-RNA in peripheral blood of patients with HIV and TB-HIV after one year antiretroviral treatment. The results indicate that the number of Tregs was significantly different between the two groups at the beginning of treatment ($p = 0.001$). The number of Treg was increased in the HIV patients and was decreased in the TB-HIV patients after antiretroviral treatment. The result suggest that the number of Tregs (CD4 + CD25 +) can be a factor to determine progression of the diseases beside CD4+ T cells and viral load.

The issue is finished by a book review on online tutoring, mentoring and educational services. Kaliappan provides a critical assessment of the book which surveys the growth and development of mentoring and tutoring techniques from kindergarten to doctorate. Chapter by chapter were analyzed and salient opinion is highlighted.

We are hoping that the readers find the issue useful and interesting.

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