

UCERD Private Limited Islamabad

www.ucerd.com

February 2018

Overview

UCERD is registered by SECP in 2016 as company titled Unal Color of Education Research & Development (UCERD) Private Limited [1].

UCERD carries out studies, research, and development and provides consultancy for the following areas

- Engineering Workshops, Master and Ph. D. Thesis.
- Final Year Projects and Future Carrier Guidance.
- Design and Develop Industrial Digital Systems.

The UCERD was established with the objective of giving education, conducting research and developing digital systems which help engineering and sciences problems.

Currently UCERD targets following areas:

- (1) Supercomputing Systems
- (2) Artificial Intelligent Applications
- (3) Software Defined Radios
- (4) Medical Health-care
- (5) Real-time Embedded Systems
- (6) Resource-Aware Computer Architecture
- (7) Interferometry Vibrator System
- (8) Internet of Things

Goals and Objectives

UCERD goals are to help science and technology by giving solutions to the life and earth sciences and engineering for biological and non-biological problems, by designing and developing State of the Art digital systems and engaging renowned researchers and scientists on one platform. It also gives informatics

talks, presentations and conducts workshops on different technical issues. The goal of the UCERD is to apply the latest advances in high performance computing (HPC) and Big Data in Life and Earth sciences and engineering. The achievement of this goal aims at putting the department at the forefront of the emerging problem of the society. This very broad and ambitious goal can be split into several more detailed objectives as follows: UCERD objectives are to solve the technological problems of this age by studying, investigating, designing and producing innovative ideas. The ideas and solutions are based on low-power, low-cost and high performance electronic system products for academia, industry and defense organizations. With this aim, special dedication has been given to fields such as Computer Sciences, Life Sciences, Earth Sciences and Medical Applications in Science and Engineering. UCERD religiously focus on following the product development cycle bridging the gap between educational and industrial organizations. UCERD major areas of work are as follow:

1. Research and Publications on biological and non-biological problems.
2. Research and Development of Earth and Life Sciences Applications.
3. Propose and Develop Commercial, Industrial and Defense Products.
4. Product industrialization.
5. Education and Training.
6. Consultancy and Services.
7. Sales and Purchase

Achievements:

In the past, UCERD has contributed science and technologies by giving the almost 50 different solutions till January 2018.

These solutions are published in venues including HiPEAC, IEEE, ACM and International Journals.

These solutions are for health-care, artificial intelligence, mechanical system, renewable energy, computer architecture, security and defense, communication system and high performance computing problems.

At a theoretical level, the UCERD proposes novel system architectures for the acceleration of earth and life sciences based high performance, specialized, complex and compute intensive applications.

The proposed solutions and methods can be applied to both biological and non-biological problems.

UCERD Research

UCERD research team gives novel ideas for the problems related to the applications e.g. avionics, embedded industrial controls, embedded networking, industrial routing & switching, and general purpose embedded computing systems, Automation and Process, Avionics and Defense, Communications and Telecom, Consumer Electronics, Industrial, Medical, Security, Space, Video and Imaging. The UCERD research team generate novel system architectures and programming environment to execute the applications. The processing architectures can have heterogeneous multi-cores supporting SIMD and MIMD instruction set architecture, reconfigurable hardware accelerators, and specialized memory and bus systems. The proposed research groups are mentioned below.

<http://ucerd.com/Research.php>

UCERD Development

UCERD development team helps science and technology;

- (i) By giving hardware/software solutions for the biological and non biological problems.
- (ii) By designing and developing state of the art digital systems.
- (iii) By engaging renowned researchers and scientists on one platform.

UCERD also gives informatics talks, presentations and conducts workshops on different technical issues.

<http://ucerd.com/Development.php>

Team UCERD

<http://team.ucerd.com/>

Awards:

1. UCERD Private Limited proposed and developed Pakistan's 1st FPGA-Powered Supercomputer [2][3].
2. Secured two Positions in DICE MUST MEGA EVENT 2017.

References

[1] Securities and Exchange Commission of Pakistan URL=
<https://www.secp.gov.pk/company-name-search/>

[searchCriteria=Contains&companyName=UNAL+COLOR+OF+EDUCATION+RESEARCH+AND+DEVELOPMENT+%28PVT.%29+LIMITED](#)

[2] "Pakistan's 1st FPGA-Powered Supercomputer System Developed by UCERD Private Limited". UCERD.Com. 18 January 2018. Retrieved 18 January 2018.

[3] Wasim, Akram.; Tassadaq Hussain; Eduard Ayguade. FPGA and ARM Processor based Supercomputing. 2018 International Conference on Computing, Mathematics and Engineering Technologies – iCoMET 2018. Islamabad: IEEE Xplorer. ISBN 978-1-5386-1370-2.