‘Vritika’ Training and Skill Internship on ‘Ubiquitous Computing’ from 1st June – 28th June, 2023

AV/VRI/2022/0269

Ubiquitous Computing is a term associated with the **Internet of Things (IoT)** and refers to the potential for connected devices and their benefits to become commonplace. Also called **ambient computing** or **pervasive computing**, **ubiquitous computing** can be described as the saturation of work, living, and transportation spaces with device that inter-communicate. These embedded systems would make these settings and transportation methods considerably more enjoyable and convenient since through contextual data aggregation and application, seamless, intuitive access points, and fluid payment systems.

Important Dates:

-> Last date of application: 19 May, 2023

-> Date of intimation to shortlisted candidates: 22 May, 2023

-> Date of submission of ‘Letter of Authentication’ and ‘No Objection Certificate’: 23 May, 2023

-> Date of reporting in the host institute: 30 May, 2023

Registration link-

https://forms.gle/7dvuDqWg2gX5xhD58

Click here for reference

About US

National Institute of Technology Delhi (NITD) is one of the thirty one NIT (s) established in the year 2010 by an act of parliament and has been declared as an Institute of National importance.

NIT Delhi is an autonomous Institute which functions under the aegis of Ministry of Education, Government of India. It aims to provide instructions and research facilities in various disciplines of Engineering, Science and Technology, Management, Social Sciences and Humanities for advance learning and dissemination of knowledge.

The mission of NIT Delhi is to produce human resource those who are creative, competitive and innovative with high intellect and ethical values. The Institute is imparting holistic education, along with inculcating high moral values in its students.

Registration Link :

There is no registration fees.
The interested students can register on the following link.
https://forms.gle/M4HaUxgVHRo8Jhac8

About the Department

The Computer Science and Engineering Department was started in 2010 along with the foundation of NIT Delhi. Initially, only Bachelor of Technology Programme was offered with the intake 30 which presently has been increased to 60. Now, apart from B. Tech., the department also offers Master of Technology and Ph.D. programmes which cover a number of important areas of Computer Science and Engineering, e.g., Algorithms, Computer Networks, Data Warehousing and Data Mining, Software Engineering, Machine Learning, Image Processing, Web Technologies, Data Analytics, Complex Networks, Wireless Sensor Networks etc.

Program Coordinator

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Sponsered By:

SERB,
DEPARTMENT OF SCIENCE & TECHNOLOGY,
Government of India

SERB Sponsored

One Month Training and Skill Internship (VRITIKA) on

"Ubiquitous Computing"

01st June - 28th June, 2023

Organized by:

Department of Computer Science & Engineering (CSE),

National Institute of Technology, Delhi

Plot No. FA7,Zone P1,
GT Karnal Road, Delhi-110036

About SSRB

SERB has a vision to position science and technology as the fulcrum for social and economic change by supporting competitive, relevant and quality scientific research and development. As the premier national research funding agency, the mission is to raise the quality and footprint of Indian science and engineering to the highest global levels in an accelerated mode, through calibrated, competitive support of research and development.

About Accelerate Vigyan

"Accelerate Vigyan" (AV) strives to provide a big push to high-end scientific research and prepare scientific manpower which can venture into research careers and knowledge based economy. Recognizing that all research has at its base as development of quality, well trained researchers; AV will initiate and strengthen mechanisms of identifying research potential, mentoring, training and hands-on workshops, on a broad based national scale. The aim is to expand the research base in the country, with three broad goals - consolidation / aggregation of all scientific training programs etc.

About VRITIKA

The VRITIKA is the call for initiation and practice in science through Training and Skill Internship. This program aims to provide opportunities to promising PG students from universities and colleges to get exposure and hands-on research skill development experience. These internships are primarily facilitated by organizations / institutions / laboratories of national importance.

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Nature of Support (if approved)

- Daily necessary expenses such as travel, stationery, consumables, accommodation, food, etc. for the participating students will be borne by the host institute through SERB funding support.
- The participating students will also be eligible for TA reimbursement for their journey to the host institute from their hometown/home institute, both ways, as per GoI norms.
- The applicants have to produce a letter of authentication from their Supervisor / Head of the Department / Head of the Institute indicating their association with the Institute and "No Objection Certificate (NOC)" for allowing their student to undergo internship, if selected.

Venue

Delhi is well connected by road, metro, rail and air services. NIT Delhi is situated on GT Karnal Road and it is about 14 kms away from nearest Jahangir Puri Metro station / 28 kms Kashmiri Gate Central Bus Terminal Stand (ISBT) and 32.7 km away from the Airport.

Ubiquitous Computing

UBIQUITOUS COMPUTING is a term associated with the **Internet of Things (IoT)** and refers to the potential for connected devices and their benefits to become commonplace. Also called **ambient computing or pervasive computing, ubiquitous computing** can be described as the saturation of work, living, and transportation spaces with devices that inter-communicate. These embedded systems would make these settings and transportation methods considerably more enjoyable and convenient since through contextual data aggregation and application, seamless, intuitive access points, and fluid payment systems.

Eligibility/Target Audience

- VRITIKA is aimed to provide Training and Skill development, hands-on experience to the students primarily from universities, colleges, private academic institutions, and newly established institutes in handling / trouble-shooting of high end scientific instruments and such skill development on themes required for research work.

- The program is meant to support 05 (Five) motivated PG level students, who are having a strong willingness to get excellence in their scientific and engineering research pursuits. However, the support will not be directly provided to the beneficiaries, but through the Event Organizers applying for and coordinating these events on behalf of SERB.

Course Contents

Through this four-week internships, the organizer would like to train the participants in the following areas.

Week-I: The Introduction to Recent Trends :- Emerging Security Challenges for Ubiquitous Devices :- Malicious Devices and Watchdog Concept, Privacy.

Week-II: Hardware Implementation and Systems :- It Started with Templates : - The Future of Profiling in Side-Channel Analysis :- Profiled Side-Channel Attacks, Template Attacks, Machine Learning-Based Attacks , Performance Metrics , Countermeasures Against SCA.

Week-III: Hardware Implementation and Systems :- Side Channel Assessment Platforms and Tools for Ubiquitous Systems :- Side Channel Attacks, Leakage Assessment Methods and Problems, Side Channel Attack Trace Collection Platforms, A Use Case of a Flexible and Fast Platform for DUT SCA Evaluation.

Week-IV: Hardware Implementation and Systems :- Challenges in Certifying Small-Scale (IoT) Hardware Random Number Generators :- Certification, Standards, and Testing, Challenges in Data Collection, Appropriate Selection of Tests.
Finding Software Bugs in Embedded Devices :- The Challenges of Embedded Devices and Software, Obtaining Firmware and Its Components, Static Firmware Analysis, Dynamic Firmware Analysis, Conclusion.