Sangeeta Kakati

sangeeta.kakati@uni.lu | ORCID: 0000-0002-4795-7489 | Google Scholar: Profile Contact: +352 661385143

EDUCATION

University of Luxembourg, Proximus
Luxembourg

Doctoral Researcher (PhD) Computer Science and Computer Engineering

Oct'2022-Dec'2025

- Interdisciplinary Centre for Security, Reliability and Trust (SnT)

Indian Institute of Information Technology
Guwahati, India

Master of Technology in Computer Science

July'2020-July'2022

- CGPA: 8.78

Central Institute of Technology
Kokrajhar, India

Bachelor of Technology in Information Technology

July'2016-June'2020

- CGPA: 9.12

Kendriya Vidyalaya
Assam, India

AISSCE (Class 12)

2014-2016

- Percentage: 84.6

Kendriya Vidyalaya
Assam, India

AISSE (Class 10)

2014

- CGPA: 10

EXPERIENCE

Project ACE5G, Luxembourg FNR

Industrial Partner: Proximus

- Execution model for heterogeneous hardware capabilities available at a higher abstraction level, common for all architectures
- Demonstrate seamless provisioning of cloud resources for applications with constraints and GPU acceleration
- Dealing with changing hardware infrastructure and how to deploy dynamically.
- Technologies allowing software containers to be executed on dynamic nodes without being modified
- Relieve developers of distributed applications from the need to match their software artifacts to the current platform(s), their compute infra-structure supports and from the need to deploy their software to specific nodes (e.g. certain edge nodes)
- Tools Used: Containerd, k3s, runwasi, WebAssembly, Multi-arch containers

Teaching Assistant

Multiple

- Data Structures and Algorithm, Databases, Computer Systems
- Computer Architecture, Operating Systems, Frontend Web development, Hands-on IoT
- Languages Courses: Python, C++

Research Intern

Indian Institute of Technology Guwahati (IITG)

- Security in IoT in terms of: Authentication, Authorization, and Access Control

Software Intern

Indian Oil Corporation Limited

- Application for fetching semester results of an institute

Collaborative Projects

Cross-architecture support for edge-cloud continuum   Oct 2022 – Oct 2025
- Implement best software development practices by developing support for heterogeneous hardware architectures in multi-platform containerization.
- Enhance support for WebAssembly in cloud servers(AWS bare metals) and embedded devices
- A reproducible experimental platform for the use of alternative runtimes in Docker
- A general GPU interface with handlers
- Implementation: Wasm, Rust, C++, Docker, Containerd, AWS
- Hardwares: Nvidia Jetson Nano (AARCH64), Starfive VisionFive2(RISCV64)

Mobility aware task-offloading in fog assisted networks   July 2021 – July 2022
- Reproducible optimal offloading mechanism for mobile end-users in distributed systems
- Performing migration in services with long term analysis(vehicular services)
- Minimize the case of migration while performing offloading until it is an essential requisite
- Implementation: MobFogSim,iFogSim
- Overall Domain: IoT, Cloud, Fog, Edge

IoT based automated outdoor lighting system | *IoT, Android, Sensors*   June 2019 – June 2020
- Enhance the maintenance of current outdoor lighting systems
- Used Thinkspeak as the cloud server to send sensor's data
- Integrated IR, LDR, current sensors to detect the presence of an obstacle
- Detection of faulty lights and real-time display in an Android application

Technical Skills

Subjects: Data Structures, Databases, Networks, Architecture, OS
Languages: C/C++, Rust, Python, Go
Frameworks: Containerd, Docker, AWS, WebAssembly, k3s, Tensorflow, iFogSim, Netsim, Spin
Areas of Interest: Cloud Platforms, Fog/Edge Computing, Containerization, Runtimes, IoT Security
Skills: Programming, Cross-Architecture, Operating Systems, Software Development

References

Dr. Nurzaman Ahmed
Engineering Research Scientist
Donald Danforth Plant Science Center, USA
Email: nahmed@danforthcenter.org

Dr. Braulio Blanco
Information Systems Architect and Data Scientist
Yoba SA, Luxembourg
Email: braulio.blanco@scriptrating.com