COMMUNICATIONS NETWORKS AND PROTOCOLS RESEARCH LAB

Contact details

<table>
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<tr>
<th>Name</th>
<th>Communications Networks and Protocols Research Lab</th>
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<tr>
<td>Acronym</td>
<td>LabRPC</td>
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<td>Logo</td>
<td><img src="http://cnp.utcluj.ro/Research%20Domain/Computer%20Science/Dadarlat_LabRPC.pdf" alt="Logo" /></td>
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<td>Site</td>
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Areas of expertise

- **Computer and communication networks, Communication protocols**
  - Development of frameworks for efficient data transmissions within hybrid computer networks optimizing the use of available bandwidth;
  - Design and implementation of Quality of Service aware frameworks;
  - Security and virtualization

- **Wireless Sensor Networks**
  - Development of new methods for routing within sensor networks, efficient use of resources and secure access to WSNs;
  - Development of specific applications (Internet of Things) with WSNs, Sensors-Cloud systems

- **Grid communications**
  - Grid based applications development (intensive computing, specific management)
  - Development of smart communication protocols, integration of real-time decision-making algorithms

- **Software products**
  - Wireless and sensors communications, adaptive routing, secure communications, benchmarking

Team


Representative projects

- **Brained City:** Dezvoltarea Inovativa prin Informatizare a Ecosistemului urban Cluj-Napoca”, proiect inovativ al Clusturului ClujIT finatat pe POSCCE/Operatiunea 1.3.3, subproiect “E-Health WSN Middleware: Middleware pentru adaptarea echipamentelor etereogene medicale și ale pacientilor existente utilizand o infrastructura WSN” UTCN/AC director: Prof. dr. ing. Vasile-Teodor Dadarlat.
- **“Analiza si taxonomia solutiilor de compromis intre securitate si calitatea serviciilor pentru communicatiile IP wireless si mobile”,** proiect postdoctoral POSDRU/159/1.5/S/137516 perioada: 01.05.2014-31.10.2015, responsabil proiect: S.I. dr. ing. Adrian Peculea
- **GREEN-VANETS - Improving transportation using Car-2-X communication and multi agent systems,** Intern CDI research project at Technical University of Cluj-Napoca, 1 October 2013 - 30 September 2014, member: Senior Lecturer Dr Eng. Bogdan IANCU
The offer addressed to the economic environment

<table>
<thead>
<tr>
<th>Research &amp; development</th>
<th>Consulting</th>
<th>Training</th>
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<tr>
<td>Network administration</td>
<td>Network administration</td>
<td>CCNA, CCNP, security essentials</td>
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<tr>
<td>QoS services implementation</td>
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<td>Advanced issues in computer networks</td>
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<td>Green smart VANETs</td>
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<td>Advanced issues in wireless sensor networks</td>
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<td>Wireless and sensors communications in Internet of Things</td>
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<td>Algorithms for power consumption in WSNs</td>
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<td>Algorithms for QoS aware routing in hybrid networks</td>
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<td>Development of applications with high degree of computing requirements</td>
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Significant results

The most representative publications of the past 5 years:


Significant solutions:
1. Drafting, development and implementation of a novel end-to-end quality of service sensitive framework for heterogeneous networks with admission control and self-adaptive bandwidth reconfiguration
2. Elaborating and proposing a new method for bandwidth organizing and dynamic allocation of bandwidth between classes in an autonomous system, to assure end-to-end QoS guarantees

Products and technologies:
1. Data Center Room (str. Baritiu 26-28): HVAC system and hosts site grid with 512 core and 12 Terrabytes storage

Patents:
2. A. Peculea, B. Iancu, V. Dadarlat, Cerere de brevet - Metoda de alocare dinamica a latimii de banda si cadru de lucru pentru transmitea in timp real a informatiilor in retele de calculatoare; Repository No.: A200900659/27.08.2009. Derwent Primary Accession Number: 2011-Q12644

Awards