Research and Teaching on Makerere University

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Faculty of Computing and IT
Outline

- Universities in Uganda
  - ICT Faculties and Departments

- Research on Communications
  - Makerere University

- Challenges
Universities and ICT units in Uganda

- **The Number**
  - 17 Accredited Universities
  - Majority are fairly recent (< 10 years old)
  - Makerere is the oldest, since 1922

- **ICT Faculties/Departments and offered ICT programs**
  - 14 in total
  - 10 offer maximum of Bachelor programs
  - 3 offer Master programs
  - 1 offers all levels

- **Makerere University (MAK)**
  - MAK offers programs at all levels
  - 2 ICT based Faculties, 1 School
ICT Research Capacity

- ICT Departments in HE institutions
- PhD holders
- Graduate programs (MSc, PhD)
- Capacity building initiatives

- External collaborations, Publications, Community outreach, etc
### Teaching on ICT, MAK

<table>
<thead>
<tr>
<th>Faculty of Computing and IT</th>
<th>ICT based Departments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Computer Science (BSc, MSc, PhD)</td>
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<tr>
<td></td>
<td>Networks (BSE, MSc, PhD)</td>
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<tr>
<td></td>
<td>Information Technology (BSc, MSc, PhD)</td>
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<tr>
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<td>Information Systems (BSc, MSc, PhD)</td>
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<tr>
<th>Faculty of Technology</th>
<th>ICT based Departments</th>
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<tr>
<td></td>
<td>Electrical Engineering (BSc, MSc, PhD)</td>
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<td>Telecommunications Eng. (BSc, MSc, PhD)</td>
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<tr>
<th>Institute of Library and Information Sciences</th>
<th>ICT based Departments</th>
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<tr>
<td></td>
<td>Information Sciences (BSc)</td>
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# ICT Research Capacity, MAK

## Faculty of Computing and IT

<table>
<thead>
<tr>
<th>Departments</th>
<th>Graduate Programs</th>
<th>Existing (PhD) Capacity</th>
<th>Training (PhD) Capacity</th>
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<tbody>
<tr>
<td>Computer Science</td>
<td>PhD, MSc</td>
<td>5</td>
<td>17</td>
</tr>
<tr>
<td>Networks</td>
<td>PhD, MSc 3 Options</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Information Technology</td>
<td>PhD, MSc 4 Options</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Information Systems</td>
<td>PhD, MSc 4 Options</td>
<td>4</td>
<td>16</td>
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<tr>
<td><strong>Total</strong></td>
<td>4 PhD, 12 MSc</td>
<td>14</td>
<td>45</td>
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ICT Research Capacity, MAK
Faculty of Computing and IT: 6 Research Groups

Research Groups in Department of Networks

Networking Research Group (Headed by Dr. Idris A. Rai)
Design and Performance Analysis of:
- Communication Network Protocols
- Wireless mesh networks for broadband access
- Sensor networks
- Overlay networks

Mobile Computing and Communications (Headed by Fisseha Mekuria)
- Mobile & Wireless Communications Technology & Services
- QoS & Mobile Multimedia Networking
- Next Generation Networks and Developing Regions (NGN-DR)
- Mobile Application Software Development
- Mobile Technology Usability, Content & Service Localization
- Innovative Mobile Services (IMS), Technology and Societal Constraints
ICT Research Capacity, MAK

Faculty of Computing and IT

Some of the Research Collaborations

University of Groningen, NL
Radboud University, Nijmegen, NL
University Technology of Eindhoven, NL
Computer Laboratory, Cambridge University, UK
  Networking, Security, Computing for future of the planet, etc
Nelson Mandela University, SA
University of Western Cape, SA
Southern University, USA
International Telecommunication Union (ITU Centre of Excellence)

Publications

Number of publications for 2007/2008 = 61 papers (16 journals/45 conferences)
Bi annually International journal on ICT research (IJCIR)
A yearly International conference on Computing and ICT research, rd-6th August

Private/Public Sector Initiatives
Faculty of Technology: Department of Electrical Engineering

Offers courses on
- Power Systems
- Machines
- Telecommunications
- Control
- Electronics

Postgraduate Studies
- Propagation Systems
- Renewable Energy
- Rural Electrification
- Digital Electronics
Research Challenges

- Lack of research culture
- Lack of local catalyst, appreciation, and support
- Lack of funding, equipments, etc
- Lack of enough qualified researchers

- Challenges in training new researchers
  - Graduate students are full time employees
    - Need for research funding to support full time students
Thank you!