Masters-Level Engineering Internships in ICT at IFAD
For: Università Roma Tre

About IFAD

The [International Fund for Agricultural Development (IFAD)](#) is an international financial institution and a specialized United Nations agency dedicated to eradicating poverty and hunger in rural areas of developing countries. Climate change, a growing global population, and volatile food and energy prices have the potential to push millions more vulnerable people into extreme poverty and hunger by 2030. IFAD provides low-interest loans and grants to developing countries to finance innovative agricultural and rural development programmes and projects. The goal of IFAD is to enable poor rural people to improve their food and nutrition security, increase their income, and strengthen their resilience.

About ICT

The Information and Communications Technology Division (ICT) is responsible for providing information technology solutions and services to support IFAD operations. ICT delivers secure, reliable, and integrated technology solutions that enable delivery of business value and provide IFAD with a strategic advantage through technical innovation and agile ICT services, and by streamlining corporate processes using effective ICT solutions.

About the Internship Programme

[IFAD's Internship Programme](#) offers a unique learning experience up to a maximum of six months for students who are currently specializing in areas of work relevant to IFAD's mission or who have recently graduated with a university degree. The Programme aims to promote a better understanding of the United Nations and IFAD. IFAD recruits outstanding students who are offered the opportunity to acquire knowledge of a "real work" environment to the mutual benefit of both the Organization and the Intern. Interns are fully involved in the work programme of the Division that recruits them to carry out assignments relevant to their studies under the supervision of a professional IFAD staff member.

Recruiting for the Internship Programme is continuous, with flexible start dates and engagement durations (up to 6 months). To be eligible for this particular internship opportunity, applicants must:

- be 30 years of age or younger;
- be fluent in English; fluency in other IFAD official languages is an asset;
- be enrolled in an accredited university or graduate school at the postgraduate level (Masters) and have attended courses in the last 12 months; or
- have completed their university studies at an accredited university at the postgraduate level (Masters) within the last 12 months.

The ICT Division of IFAD is offering a number of interesting and challenging internship assignments aimed at students studying computer science, software engineering, information and communication systems, artificial intelligence, or machine learning at a Masters level, and fluent in English. The Interns will support a major organizational change process that is underway, which is referred to as the Targeted Capacity Investment (TCI) Initiative. One of the key components of the

TCI initiative is the "People, Processes and Technology Programme" (PPTP). The PPTP seeks to bridge the gaps in workforce and corporate processes to help IFAD effectively deliver its work and to better tackle the global challenges ahead. The plan is a central element in IFAD's broader corporate strategy intended to strengthen its presence and engagement in the field, and to maximize development results. As one of the programme work streams, Technology will directly enable the other two streams of People and Processes, to augment IFAD's operational capacity but most importantly is leading on the Automation programme. Automation is focused on introducing new technologies into IFAD as pilots to test their impact and usefulness in addressing business challenges. The work to date has developed several Chatbots and Robotic Process Automation (RPA) solutions. Currently a data analytics platform is being finalized with opportunities to prototype AI and ML solutions. This is an opportunity for students to join us and develop their professional skills and portfolio, with real projects in technical engineering areas.

Expected Activities

1. Research tools, concepts, products/services, and use cases to expand ICT's technical and industry knowledge base.
2. Design and develop technical solutions from the proof-of-concept stage to the functional prototype stage. Promising solutions may be scaled up to more advanced implementation and integration stages.
3. Contribute to ICT's PPTP initiatives as appropriate, ranging from systems architecture and data engineering to web-app development and strategic automation.
4. Support ICT project teams to ensure smooth operations and delivery, including but not limited to tasks such as technical reviews, tests, documentation, and user engagement.
5. Demonstrate a desire and ability to build working ICT solutions. We value candidates that can convert conceptual information into proposals, designs, prototypes, results, and more.

Sample Project

Title: Using AI services to improve document content tagging and search engine indexing

Overview: What is the most useful information in any given document? How can we extract this information? How can we make it easier for users to find relevant and/or related documents? These open-ended questions keep us thinking and exploring! In this project, we researched what AI text and language capabilities could do for us, and designed and developed a document-processing pipeline that runs the gamut from input PDF files to output JSON objects. We used generic AI services and SDKs to accomplish our task, but made sure we did so in a way that was easy to scale and integrate with our wider ICT systems, including challenges such as supporting multiple IFAD languages, regions, and document types.

Technologies: This type of project offers several technical opportunities for interns, depending on the desire and ability to get involved with specific areas. For example: the data input components involve systems engineering challenges such as cloud architecture and database management in Azure; the AI processing components involve hands-on development with Python, Jupyter Notebooks, and JSON/CSV files; the data output components involve design of REST APIs, integration with web services, and knowledge of Ruby on Rails; and, even the analysis and visualization components could involve storytelling through the use of Excel and Power BI.