

NOKIA Romania - Summer Practice Projects 2020

Part I

NOKIA Romania is looking for enthusiastic and creative students for summer practice projects to enhance their future professional career. Do you want to put your knowledge to work, add new skills and contribute to something big and extraordinary?

Index	Summer Practice Project Title	Short Description of the Project	Technical Requirements to Complete the Task	Department	Details
1	4G/5G Test automation in Robot/Python framework	Automate test cases using Robot Framework.	IP, Python, 4G knowledge	Mobile Networks	4 students, 4-6 hrs/day, period to be defined together after selection
2	Testing 5G cloud	Our team focuses on testing functional aspects and ensures that new features are working in accordance to specification on acceptable level of quality defined by acceptance criteria. Tests are both manual and automated and are performed on both simulated and real HW. We cover 3 different layers of testing inside our team.	Students that really want to learn something, are quick learners and want be involved and challenged	Mobile Networks	3-5 students, 6h/day, period to be defined together after selection
3	SW Development using Agile/Scrum, Git, Jira, Power BI and Robot Framework	The goal is to initiate students for working with general/modern tools use by SW companies.	SW development	Mobile Networks	4 students, 4h/day, July/August
4	Tool for Trace investigation Cloud BTS / TRS-Config	Develop a tool to extract keyword from Cloud BTS / TRS-Config traces and minimize the trace to a set of useful information for a Developer, to quickly understand big amount of traces.	Scripting knowledges Programming knowledges	Mobile Networks	2 students, 4h / day, period to be defined together after selection
5	UT coverage for Cp Config & OAM-Agent	Increase Unitary Tests coverage for Cloud domains, particularly Cplane configuration and OAM-Agent.	C++ and gmock/gtests	Mobile Networks	3-4 students, period to be defined together after selection
6	AIPA scripts	RAIN analyser adaptation to be able to integrate in AIPA CU OAM components.	Python & Linux	Mobile Networks	3-4 students, period to be defined together after selection
7	Clangtidy warning	There are many clangtidy warning, that could be resolved.	C++	Mobile Networks	3-4 students, period to be defined together after selection
8	RF Sharing Principles in Newest Radio Technologies	Testing the RF Sharing applied to latest technologies in Nokia "oven": 4G, 5G.	Telecom basic/automation basic/Linux basic.	Mobile Networks	Number of students: TBD Hours/day: 4-6 Period: July-September
9	AI/ML SRAN BOT	Machine Learning to help testers to avoid Attached Pronto.	Django and Python Virtual Environments.	Mobile Networks	2 students / hours day / July - September
10	5G evolution to multiRAT SBTS environment	Check operability parity for single logical SBTS equipped with ABIL for 5G RAT processing in multiRAT SBTS environment.	Basic knowledge about 2G /3G /4G /5G technologies. Learn how to install and configure SBTS SCF creation and plan activation on SBTS . Capability to use and interact with different tools specific to testing. Capability to test the basic functionalities for 5G in multiRAT environment.	Mobile Networks	2 students; 8h/day August-September
11	First steps for an automated test environment	Introduction to automation and how to set up an automated test framework, using Jenkins, Pycharm and GIT.	Telecom, Linux.	Mobile Networks	1 student; 6h/day; period to be defined together after selection
12	SBTS introduction and Nokia internal testing tools	We will study multi technology Nokia product (which includes 2G, 3G, 4G and 5G) and ways of testing it.	Telecom, Linux.	Mobile Networks	1 student; 6h/day; period to be defined together after selection
13	SW Integration and Verification in Automated environment	Create automated test cases based on test descriptions, finalizing by adding them into weekly automated testing that is performed in Product continuous integration for 2G.	Basic knowledge of programming language (C, Python or Java).	Mobile Networks	1 student, 4-6 hours per day, June - July

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Part II

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Index	Summer Practice Project Title	Short Description of the Project	Technical Requirements to Complete the Task	Department	Details
14	CORE Support Operations for Cloud Projects	Supporting Operation Teams in proactively performing Preventive Maintenance, KPIs monitoring, Service requests.	Basic Telecom, Basic Unix, Core Architecture is a plus, Communication skills, English mandatory.	Global Services	6 Students, 6h/day, period to be defined together after selection
15	Development of Web Tools	Feature development for NOKIA Planning TOOL using REACT/Node.JS; Web App Development for process automation using Django/Python.	GIT; NODE.JS/React, Python/Django; relational database knowledge	Global Services	2 students, July-August, flexible schedule
16	Frequency planner	Frequency planning algorithm, cost optimization algorithm used in the telecom space to provide an optimum radio frequency plan allocation.	Java, Spring, Algorithmics, Object Oriented Design, Self Learner Will need to use and learn: Apache OptaPlanner.	Global Services	2 students, 4-6h/day, no constraints on period as of now
17	CO Pre-sales	Introduction to Corporate Sales and Pre-sales. Product Solutioning and Sales Consultancy.	Wireless Telecommunications Infrastructure – Overview.	Center of Competence	5-6 students, 6h/day, period to be defined together after selection
18	Automate Nessus scans using Jenkins & Sikuli	Create an Sikuli script to launch a Nessus scan in our lab, and integrate it with Jenkins, as a task to be launched periodically.	SW development, adaptability and creativity, willing to learn new things to solve problems	Fixed Networks	2 students, 6h/day, 2-3 weeks
19	Replace Oracle database with a free solution into A1330 Dataserver application	A1330 Dataserver software use an old Oracle 9i database. It would decrease costs to replace it with a free solution like PostgreSQL or MySQL.	SW development, adaptability and creativity, willing to learn new things to solve problems	Fixed Networks	1 student, 6h/day, 2-3 weeks
20	Compile old Win PX applications (Ms Access, Boland Delphi) to Windows 10	DataQuery(MS Access) si OnDemandReporting(Delphi-Pascal) are two old WinXP applications that must be updated to run on windows 10. Additional: replace Borland database engine with a free product(PostgreSQL, MySQL)	SW development, adaptability and creativity, willing to learn new things to solve problems	Fixed Networks	2 students, 6h/day, 3-4 weeks
21	Move old HP-UX PA-RISC production servers from bare metal to virtualized environment (HP-UX 9000 Containers)	A study must be done and implementation steps should be created in order to save some old HP-UX production servers, based on PA-RISC processors. The solution to migrate to HP-UX 9000 Containers is documented by HP and must be adapted to our servers and test if it works.	Operating systems knowledge, adaptability and creativity, willing to learn new things to solve problems	Fixed Networks	2-3 students, 6h/day, 4-6 weeks
22	Smart Parking System	Integrate all parts of mobile app and a dashboard for users to access on site smart parking system. Deploy in real environment all components from SW to HW using the existing framework working in proof of concept mode. Work on plate recognition algorithm, payment and more access functionalities.	Mobile Apps, web development, OpenCV, C++, scripting	Nokia Romania Garage	3 students, 4-6h/day, period to be defined together after selection
23	Ambrosia Alert	In the context where many people are allergic to ambrosia or other allergically plants, it would be useful to have a mobile application that sends an alert if the user approaches an area with high risk of allergy. Project is based on 3 components. A mobile application used to report a place with ambrosia (or other allergically plants) on it and receive alerts if the user is near the ambrosia (or other allergically plants) field. A cloud database. A dashboard to manage the application.	Mobile app dev. Web dev. Data Base.	Nokia Romania Garage	3 students, 4-6h/day, period to be defined together after selection
24	InMoov for Move	Use an InMoov Humanoid Robot to create a virtual interaction; command servos by micrcontroller; use XBOX Kinect to translate movement and command robot actions.	Microcontrollers, Mechanics, Programming(C & Python).	Nokia Romania Garage	3 students, 4 hours/day, period to be defined together after selection
25	Autonomous delivery Courier Rover	With the help of a set of "computer vision" techniques aid a motorized platform (rover) to deliver goods at predefined locations. In order to achieve that is need to develop following: Administrator interface used for: train neural network, user management and location management End user interface used for : request a transport and live trailing delivery.	Web front end and backend programming using microservice architecture. Communication protocols: REST, Message buss, WebSocket.	Nokia Romania Garage	3 students, 4-6h/day, period to be defined together after selection
26	Outlook Add-on to generate ticket in a ticketing tool	The idea is to have an Outlook Add-on, which could generate from an e-mail an individual ticket in a ticketing system that helps HR department to follow-up some requests.	Knowledge of Microsoft products, and Oracle databases (ticketing system is an Oracle based application).	Human Resources	1 student; 4-6h/day; period to be defined together after selection

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