Diploma projects 2018/2019

1. Precision agriculture demo using Open Garden Outdoor Platform from Cooking Hacks
   a. Position available: 1 student
   b. Requirements: hands-on experience with Arduino (for building the kit and programming), web/mobile programming skills, ability to work independently, with minimal supervision.
   c. Description:
      - Learn about precision agriculture and wireless sensor nodes
      - Build a demo case using Open Garden Outdoor Platform (1Gateway, 2 Nodes and Weather Station WS-3000)

2. Visual programming environment (web-based and/or mobile) for junior programmers using low-cost Arduino-based robot kits
   a. Position available: 2 students
   b. Requirements: hands-on experience with Arduino or similar platforms (for building the kit and programming), web/mobile programming skills, ability to work independently, with minimal supervision.
   c. Description:
      - Build and customize Arduino-based robot kit
      - S4A programming (http://s4a.cat/) integration
      - Design a visual interface (web-based and/or mobile) for robot’s commands easy to use be junior programmers

3. Mobile app for visual recognition for coins and banknotes
   a. Position available: 1 student
   b. Requirements: mobile app programming skills, ability to work independently, with minimal supervision.
   c. Description:
      - Design and program a mobile app (Android or iOS)
      - Coins and banknotes recognition (for example Google Cloud Vision, IBM Watson Visual recognition)
      - Cloud integration (Google, Amazon or Microsoft services)
      - Ebay search integration
      - Reports

4. Software Defined Networks (SDN) applications
   a. Position available: 1 student
   b. Requirements: computer networks knowledge, programming skills (Python), ability to work independently, with minimal supervision.
   c. Description:
      - Learn about network programmability and Software Defined Networks
      - Deploy, configure and manage a Cisco APIC-EM
      - Create tutorials and apps using Cisco Application Centric Infrastructure (ACI)

The desired topic subject together with a CV must be sent to the following email address: bogdan.iancu@cs.utcluj.ro