

BiCS



BicsLab: The BiCS Laboratory

short version

Presentation Parts

- 1: BicsLab Presentation *(slide 3)*
- 2: BicsLab Partnership *(slide 7)*
- 3: BicsLab Partners *(slide 10)*
- 4: BicsLab Partners Projects *(slide 13)*
- 5: BicsLab Partners Day *(slide 16)*
- 6: What Else ? *(slide 18)*
- 7: Contact *(slide 20)*

Part I

BicsLab Presentation



► BicsLab Context

- **BiCS**: Bachelor in Computer Science
 - Opened in September 2017, **3 years** duration studies
- **BSP**: Bachelor Semester Projects
 - each semester (**52 ECTS** total over 180), 15 hours of work per week
- **BicsLab**
 - support industrial collaborations, student entrepreneurship projects
- **Computer Science@UL**
 - CSC and SnT (≈ 350 scientists)
 - 2 bachelors, 1 master, 1 doctoral school
 - Times Higher Education Rank: **78th**





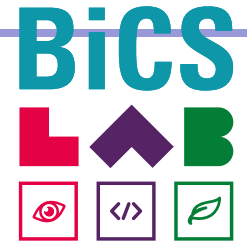
► BicsLab Objectives

- Support **business incubation** for selected BiCS students
- Host selected BSP (Bachelor Semester Projects)
- Develop **industrial collaborations**
- Provide an initial R&D support structure for selected BiCS students

► Financing

- Internal funds (**BiCS**)
- **External funds** (industrial partnerships, BiCS Challenge,...)

► BicsLab Responsible: Prof. Dr. Nicolas Guelfi



► BicsLab Axes

- **Greenware** (Benoît Ries)
 - Cyber-Physical Systems Engineering for Ecosystems Resilience Monitoring
 - Educational games and simulators for Positive IT
- **Software** (Alfredo Capozucca)
 - Research software related problems to find and develop innovative solutions
 - Deliver educational activities to transfer and share the insights found through our research activities
- **Senseware** (Nicolas Guelfi)
 - Software engineering for intelligent and augmented environments
 - Interdisciplinary (learning, robotics, virtual & augmented reality)

Part II

BicsLab Partnership

► BicsLab Partnership: Benefits

- Access to **Bachelor Semester Projects** (BSP) of BiCS students
 - Define student projects suited to **your needs**
 - Have a BiCS student working for **≈ 200 hours** on your defined projects
 - Access to a **supporting software engineer** for the supervision, packaging, deployment (with an optional extended agreement)
 - Access to get students for **summer jobs**: 4 to 8 weeks of full time paid job (optional with additional charges))
- Access to **scientific forums** with students and tutors
 - next BicsLab Day, 13th May 2019 !
- **Be visible to BiCS students** and to other BicsLab Partners and to BiCS sponsors

► BicsLab Partnership: How-to

● BicsLab Partnership Agreement

- Signature by the Partner, the University of Luxembourg and the BiCS Director
- Contribution to the BicsLab budget : 3 000€ /year
- Valid for one year (renewable)

● Bachelor Semester Project Setup (May and November)

- Definition and proposal of BSPs subjects to students (support by academic tutors, if needed)
- Advise from an academic tutor in selecting the most appropriated student
- Signature of a Bachelor Student Project agreement for each accepted student at the partner
- Availability of the student to work on his/her subject at the partner's office

● Invitation to BicsLab Events (BicsLab Partners Day)

- Benefit from a networking and R&D thematic opportunity (once or twice a year)

Part III

BicsLab Partners



► Neobuild



- **BicsLab Partner:** *since January 2018*
- **Bachelor Semester Projects:** 2
 - *Optimisation of an autonomous farming robot for hydroponics*
 - *Development of a professional and automated robot for handcraft sector*
- **Business Domain:** *Innovation in Sustainable Construction*

Part IV

BicsLab Partners Projects

► Bachelor Semester Project

- Adapting the **FarmBot** for hydroponic greenhouses on Luxembourg Rooftops
- **Student**
Gilles Magalhaes (BiCS, Semester 2)
- **Tutor**
Benoît Ries (UL)
- **BicsLab Partner**
Neobuild, LU (Nicolas Zita)



neobuild

► BSP Results

- A proof-of-concept prototype hardware design & software setup for using the FarmBot **open-source system in an hydroponics** context of the Neobuild company.
- Defined a **textual DSL** targeted to gardeners for easier specification of sequences of robot activities



Video (5')

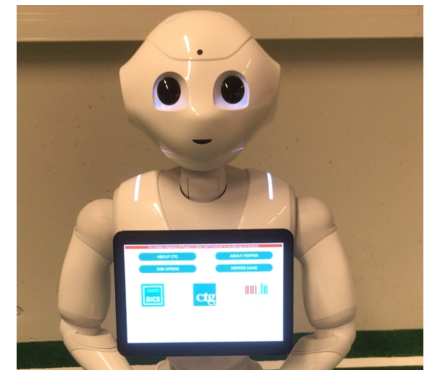
► Bachelor Semester Project

- Vocal, visual and tactile interactions with the Pepper robot to present and promote the CTG company at MooviJob
- **Student**
Lucas Kleffert (BiCS, Semester 1) and Liz Schreiner (BiCS, Semester 3)
- **Tutor**
Nicolas Guelfi (UL)
- **BicsLab Partner**
CTG, LU (Dhana Grimont Perrin)



► BSP Results

- An embedded web site usable using the Pepper on-board tablet
- A pepper vocal and visual interactions management software



Video (15')

Part V

BicsLab Partners Day

- ▶ **BicsLab Partners Day Coming Soon... *May 13, 2019 !***
 - a scientific forum to meet & match BicsLab partners and BiCS students
- ▶ **Theme**
 - **Greenware** : ICTs for a Sustainable Luxembourg
- ▶ **Participants**
 - BicsLab (current & potential) Partners: \approx 10 people
 - BiCS Students: \approx 25 people
 - BicsLab Tutors: \approx 5 people



Part VI

What Else ?

► BicsLab Partnership : a First Step to even More Opportunities

- **Connect** with Bachelor and Master thesis students
- **Recruit** technicians or engineers
- Joint Supervision of **Thesis**
 - At Bachelor-level
 - At Master-level
- Take part in defining **National and International** Research Projects with us

Part VII

Contact

► To **become** a BicsLab Partner and be **on-board** with us !

- **Contact Florence Brant**

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Questions, Ideas, Remarks

