Experience from the
European Masters Program
Language & Communication Technologies
(based on LCT students' feedback)

www.lct-master.org

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Background Requirements

"Applicants must have a Bachelor degree or equivalent in the area of (Computational) Linguistics, Language Technology, Cognitive Sciences, Computer Science, Mathematics, Artificial Intelligence, or other relevant disciplines, subject to the consent of and the approval by the consortium's admission committee."

What is linguistics background

Specific examples include undergraduate in

- Theoretical linguistics

- Philology and linguistics

- Language, linguistics and literary study

Note: LCT sets as requirement at least some formal linguistics background (but this is not enough)

What lx students miss

Basic (fundamental) concepts in these academic subjects:

- Math, esp. calculus, lin. algebra, statistics, probability
- Data structures & algorithms
- Programming, esp. python
- Machine learning
- What are common NLP applications

For (much) more detail on non-linguistics background needed for NLP industry jobs see a blog post of one LCT alumni:
https://kaleidoescape.wordpress.com/2018/11/30/the-nlp-job-hunt/

What lx students miss

Practical approach

- "confidence to explore and make mistakes without worrying about breaking things"
- "hands-on approach to tasks and to not be discouraged by being thrown onto a practical task and asked to swim"
- "googling around and watching YouTube tutorials as a way to learn skills"
- "it's ok to feel sort of clueless at first, it's ok to ask very basic questions, it's ok to not have any literature to guide one through a hands-on topic etc."
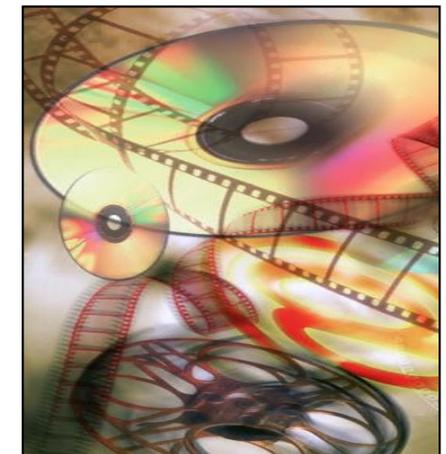
Overview of the LCT Program

What is Language Technology

- Language Technology (LT): methods, programs and devices for the processing of spoken and written language often together with gestures, facial expressions, pictures and sounds, multimodal communication, multimedia documents

- We explicitly extended LT to LCT to cover also interactive multimodal technologies

- LT is a truly interdisciplinary endeavour – computational and theoretical linguistics, computer science, mathematics, electrical engineering, psychology

Why Language & Communication Technology

- ⊙ Language is
  - ⊙ the most powerful and natural medium of communication
  - ⊙ the primary medium for structuring and accessing all types of information
- ⊙ Most knowledge of humankind is stored and passed on in texts
- ⊙ There are more than 6000 active languages in the world, more than 2000 are written
- ⊙ Language Technology is everywhere, e.g., information retrieval, spoken dialogue applications, machine translation, etc.
- ⊙ Language Technology market is booming

The LCT Masters Program

- Since 2006; 200+ enrolled students

- Consortium of 7 EU Universities

- Jointly developed curriculum making up a common, 2-year full-time Masters programme

- Study at a pair of universities of the consortium

- 1 year at each University

- Double degree

- Tuition is in English

LCT Consortium

- Saarland University (Germany, coordinator)

- University of Malta (Malta)

- Charles University, Prague (Czech Republic)

- University of Lorraine, Nancy (France)

- University of Groningen (The Netherlands)

- University of Trento (Italy)

- University of the Basque Country (Spain)
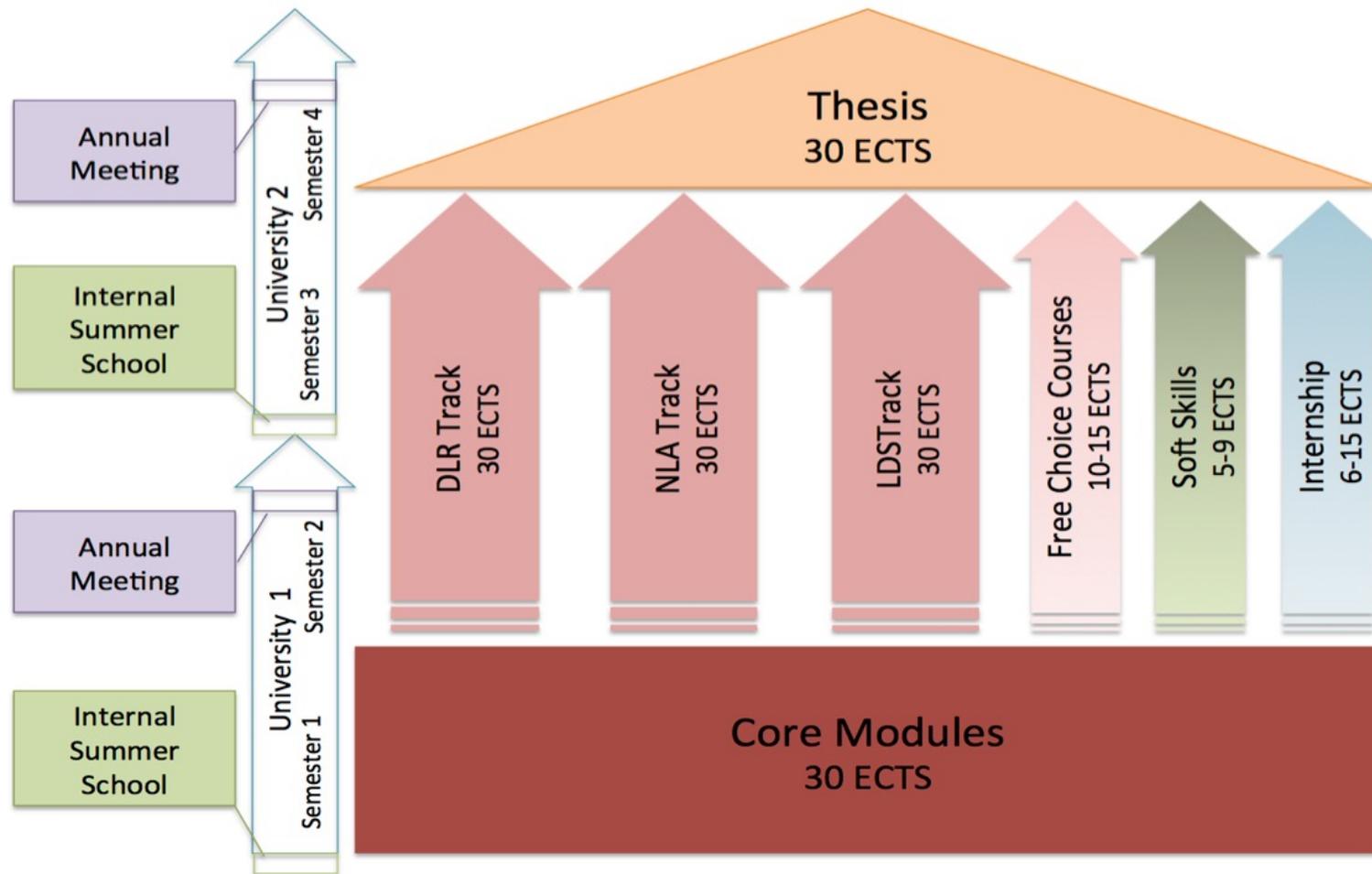
LCT Curriculum
(new from intake 2020)

Three tracks, catering to different profiles of incoming students:

- **Digital Language Resources** (DLR): design, create and exploit annotated data resources for natural language applications or for the empirical validation in cognitive and experimental linguistics.

- **Natural Language Algorithms and Applications** (NLA): design and implement algorithms and machine learning techniques that are relevant to fundamental natural language processing problems such as parsing, generation, translation, as well as more advanced applications and platforms that make use of such algorithms.

- **Language Data Science** (LDS): apply Data Science techniques to large quantities of language data of different types and granularities in order to address important practical tasks such as information extraction, sentiment analysis, speech recognition, data visualisation etc.

LCT Curriculum Structure
(new from intake 2020)

Mobility requirements

- Students of the LCT Masters are allocated to two partner institutions of the consortium and spend one year of studies in each EU university, amounting to 60 ECTS credits each year.

- Students are jointly monitored by two or three lecturers (tutors), one from each institution. The result of such a program is twofold: a) scientifically, it brings students to contact with two research environments and different areas of specialisation; and b) culturally, it brings students to contact with two societies which, crucially, have different languages (and, given the topic of the Masters, multilinguality is considered a key issue by the consortium).

Participation Fees and Financing

- ⊙ Participation fees
  - Programme country (~EU) :4250 Euro per year
  - Partner country (~non-EU): 8500 Euro per year
- ⊙ Financing:
  - Erasmus+ scholarships
    - Full Erasmus+ EMJMD scholarships (approx. 22 per year from intake 2020)
    - Erasmus+ exchange grants for Y2
    - LCT grants = (partial) fee waivers
  - Self-funding
    - Individual grants, e.g., from governments, companies, etc.
    - Own private funds

Visit www.lct-master.org for more!!!