



Loria



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We are currently recruiting PhD candidates for the topic detailed below, kindly forward the announcement to anyone who might be interested.

### **Design of a Multilingual and Adaptive System for Transforming Scientific Documents into Personalized Interactive Videos**

Scientific knowledge dissemination is hindered by complex research articles, language barriers, and varying audience expertise levels. This thesis proposes an integrated framework to automatically convert scientific papers into multilingual interactive videos dynamically adapted to users' cognitive profiles and expertise (novice, student, expert).

The research develops methods for semantic extraction of key elements (objectives, methods, results, conclusions), narrative restructuring by expertise level, multilingual video script generation, pedagogical visuals/animations, and interactive video players with real-time Q&A powered by intelligent backends leveraging SciBERT, LLMs, and visual generation tools. Key challenges include maintaining semantic coherence in multilingual restructuring using knowledge graphs, multi-objective optimization balancing video length/cognitive load/fidelity via potential hybrid RL/evolutionary algorithms, low-latency hybrid retrieval prioritizing source documents, and validating AI-generated scientific visuals through text-image feedback loops.

The system enhances education, research training, and open science through inclusive, personalized multilingual video content.

This PhD thesis, hosted at LORIA (Université de Lorraine) under the supervision of Pr. K. Smaïli and Pr. A. Oulamara, is funded by CHIST-ERA through the MUTASK project and will start in April 2026.

Applicants must submit a complete application file including CV, academic transcripts, letters of recommendation, previous research work (if any), and any additional information supporting their selection as a PhD candidate.

Please send your complete application file to: [smaili@loria.fr](mailto:smaili@loria.fr) and [ammar.oulamara@loria.fr](mailto:ammar.oulamara@loria.fr)