Preface

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This year, the workshop on Intelligent Textbooks was organized for the fifth time. It built on the success of the four previous workshops conducted in 2019[1], 2020[2], 2021[3] and 2022[4]. This workshop series has been attracting contributions addressing a broad range of research questions related to the idea of intelligent textbooks. While the pioneer work on various kinds of intelligent textbook technologies has already begun, research in this area is still rare and spread over several different fields, including AI, human-computer interaction, information retrieval, intelligent tutoring systems, educational data mining, and user modeling. The iTextbooks workshop series has brought together researchers working on different aspects of intelligent textbook technologies in these fields and beyond to establish intelligent textbooks as a developing interdisciplinary research field.

The iTextbooks'2023 workshop was organized on July, 03, 2023 in conjunction with the 24th International Conference on Artificial Intelligence in Education, AIED 2023 in Tokyo, Japan.

The workshop received 16 submissions (12 full papers and 4 demo papers); 9 of them have been accepted (6 full papers and 3 demo papers). Additionally, the workshop program has included one invited talk. The workshop was organized in a hybrid manner, with 4 presentations given online and 5 – on the conference site. About 40 people attended the workshop (30 on-site + 10 online participants).

The workshop program was structures as follows.

09:00 - 09:30 Intro
09:30 - 10:30 Session 1 (Textbook usage analysis)
- Full paper:
  Analyzing Student Session Data in an eTextbook.
  Samnyeong Heo, Mohammed Farghally, Mostafa Mohammed, **Clifford Shaffer**
- Full paper:
  Advancing Intelligent Textbooks with Automatically Generated Practice: A Large-Scale Analysis of Student Data.
  Rachel Van Campenhout, *Michelle Clark, Bill Jerome, Jeffrey Dittel, and Benny Johnson*

10:30 - 11:00 Coffee break
11:00 - 12:30 Session 2 (Invited talk + crowdsourcing)
- Invited Talk:
  eBook + LA => BookRoll
  Hiroaki Ogata
- Full paper
  Exploring the Content Ecosystem of the First Open-source Adaptive Tutor and its Applications on Intelligent Textbooks
  Ioannis Anastasopoulos

12:30 - 13:20 Lunch break
13:20 - 14:50 Session 3 (Textbook content analysis)
- Full paper:
  Layout and Activity-based Textbook Modeling for Automatic PDF Textbook Extraction.

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[1] http://ml4ed.cc/2019-AIED-workshop/
[2] https://intextbooks.science.uu.nl/workshop2020/
[3] https://intextbooks.science.uu.nl/workshop2021/
[4] https://intextbooks.science.uu.nl/workshop2022/

*Élise Lincker, Olivier Pons, **Camille Guinaudeau**, Isabelle Barbet, Jérôme Dupire, Céline Hudelot, Vincent Mousseau, Caroline Huron*

- Full paper
  Eliminating Hallucinations: GPT-based Explanatory AI for Intelligent Textbooks and Documentation
  ***Francesco Sovrano**, Kevin Ashley, Alberto Bacchelli*
- Full paper
  Harnessing Textbooks for High-Quality Labeled Data: An Approach to Automatic Keyword Extraction
  *Lorenzo Pozzi, Isaac Alpizar-Chacon, **Sergey Sosnovsky***

14:50 - 15:20 Coffee break

15:20 - 16:40 Session 4 (Demos)

- Demo paper
  Digitalizing educational workbooks and collecting handwritten answers for automatic scoring
  ***Tomo Asakura**, Hung Nguyen, Truong Nghia, Nam Ly, Cuong Nguyen, Hiroshi Miyazawa, Yoichi Tsuchida, Takahiro Yamamoto, Masamitsu Ito, Toshihiko Horie, Ikuko Shimizu, Masaki Nakagawa*
- Demo paper
  Converting Physical Textbooks into Interactive and Immersive 'Phygital' Textbooks: A Proposed System Architecture Design for Textbook Companion Apps
  ***Devanshu Saindane**, Sunny Prakash Prajapati, Syaamantak Das*
- Demo paper
  Curio: An On-Demand Help-Seeking System on iTextbooks for Accelerating Research on Educational Recommendation Algorithms
  ***Ying-Jui Tseng**, Yu-Hsin Lin, Gautam Yadav, Norman Bier, Vincent Aleven*

16:40 Discussion

The workshop website (https://intextbooks.science.uu.nl/workshop2023/) provides additional information regarding the announced calls for papers and used submission procedures. In conclusion, we would like to thank the program committee members of iTextbook'2022 that helped prepare the workshop program:

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