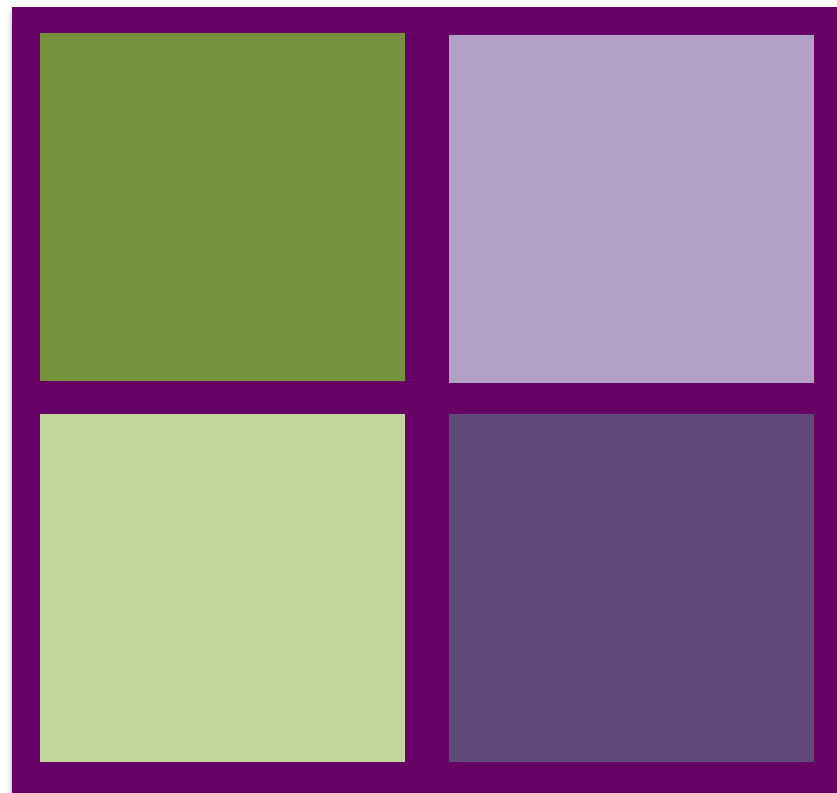




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# **WG2** Efficient Machine Learning Algorithms, Methods, and Applications to Language Generation

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# Outline

- Theme of WG2
- Planned activities
- Progress so far
- WG2 meeting program



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# Theme of WG2

- WG2 deals with ML machinery behind state-of-the-art LG models
- WG2 focuses tasks
  - multi-task and transfer learning
  - representation learning
  - structured prediction
  - generative models
  - multi-modal models
  - others



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# Planned activities

## Five targetted concrete outputs:

- Survey and position papers
- Joint journal and conference publications
- Cross-topic research roadmap identifying where research effort is most needed and the research challenges that need to be addressed
- Repository of open-source software for processing language and visual content, inc. a directory of sources of materials or components
- Organization of training and summer schools (with WG4)



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# Progress so far

## On the communication btw WG members:

- WG2 mailing list ([wg2@sympa.multi3generation.eu](mailto:wg2@sympa.multi3generation.eu))
- Slack channel (#wv2-ml)





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# Progress so far

## On the state-of-the-art surveys:

- **Survey 1: The state-of-the-art in Neural Natural Language Generation** (led by Aykut Erdem & Elena Lloret)
  - Final draft almost ready
  - Investigates several different NLG tasks from 4 unique dimensions: multilinguality, multimodality, controllability, and learning strategies
- **Survey 2: Computing-resource efficient ML for Natural Language Generation** (led by Marcin Paprzyck)
  - No progress so far



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# Progress so far

## On the repository of open-source software:

- We will contribute to NLP Progress (<http://nlpprogress.com>)
- No progress so far, except the pointers to the state-of-the-art approaches



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# Progress so far

## Recent publications by WG2 members:

- M. Sercan Amac, Semih Yagcioglu, Aykut Erdem, and Erkut Erdem. **Procedural Reasoning Networks for Understanding Multimodal Procedures**, CoNLL 2019.
- Victor Milewski, Marie-Francine Moens and Iacer Calixto. **Are scene graphs good enough to improve image captioning?**, ACL 2020.
- Ales Zamuda and Elena Lloret. **Optimizing Data-Driven Models for Summarization as Parallel Tasks**, Journal of Computational Science, Vol. 42, April 2020.



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# WG2 meeting program

## Proposed agenda:

- Spotlight talks by WG2 members
- Forming sub-working groups for the planned activities
- Task assignments to the sub-groups



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# WG2 meeting program

## Proposed program

- 15:00:15:30 Spotlight talks by WG2 members
- 15:30-16:00 Discussions on the sub-working groups

Please let me know if you are interested in giving a presentation by sending me ([aerdem@ku.edu.tr](mailto:aerdem@ku.edu.tr)) your name and the title of your presentation