Developing without Developers

Software Development Methods for LD Apps

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Outline

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- Roadmap:
  - The state of LD apps
  - Development in industry vs. academia
  - Experiment
  - Conclusion

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- Ideal: a comprehensive LD app
  - Built-in support for most tasks
  - No shuffling data around between apps

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- One major reason: development methods in LD have been copied from industry

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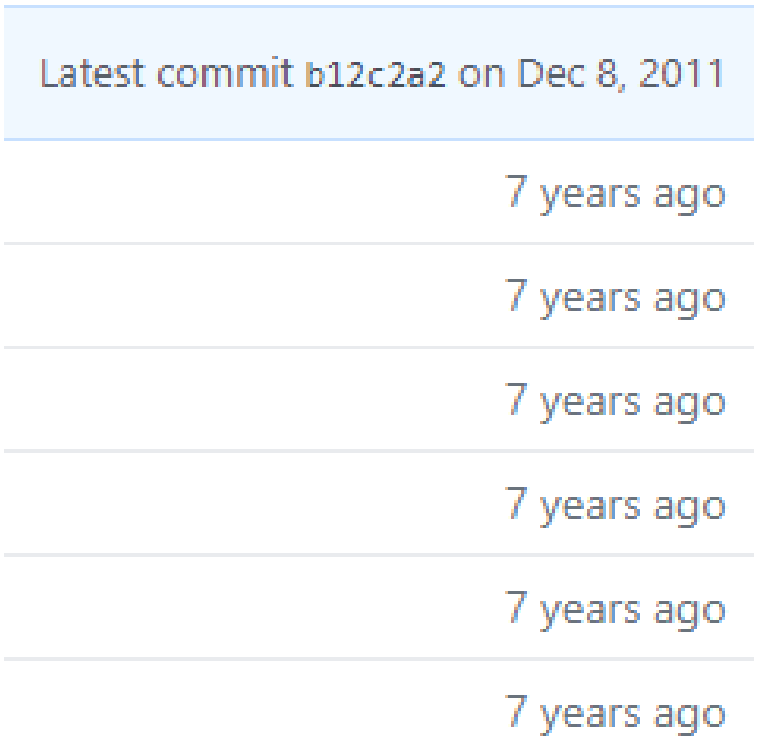
- ...and the graduate student graduates



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- Hypothesis: to alleviate the labor shortage, LD app developers need to carefully choose tools (programming language, platform, libraries, etc.) which enhance their productivity
  - As opposed to performance, ease of use, security, correctness, ...

Acting on the hypothesis

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   - Choose stable languages and libraries
3. Choose libraries that are especially designed for the challenges of our domain (LD)
   - No internet
   - Multi-user collaboration
   - ...

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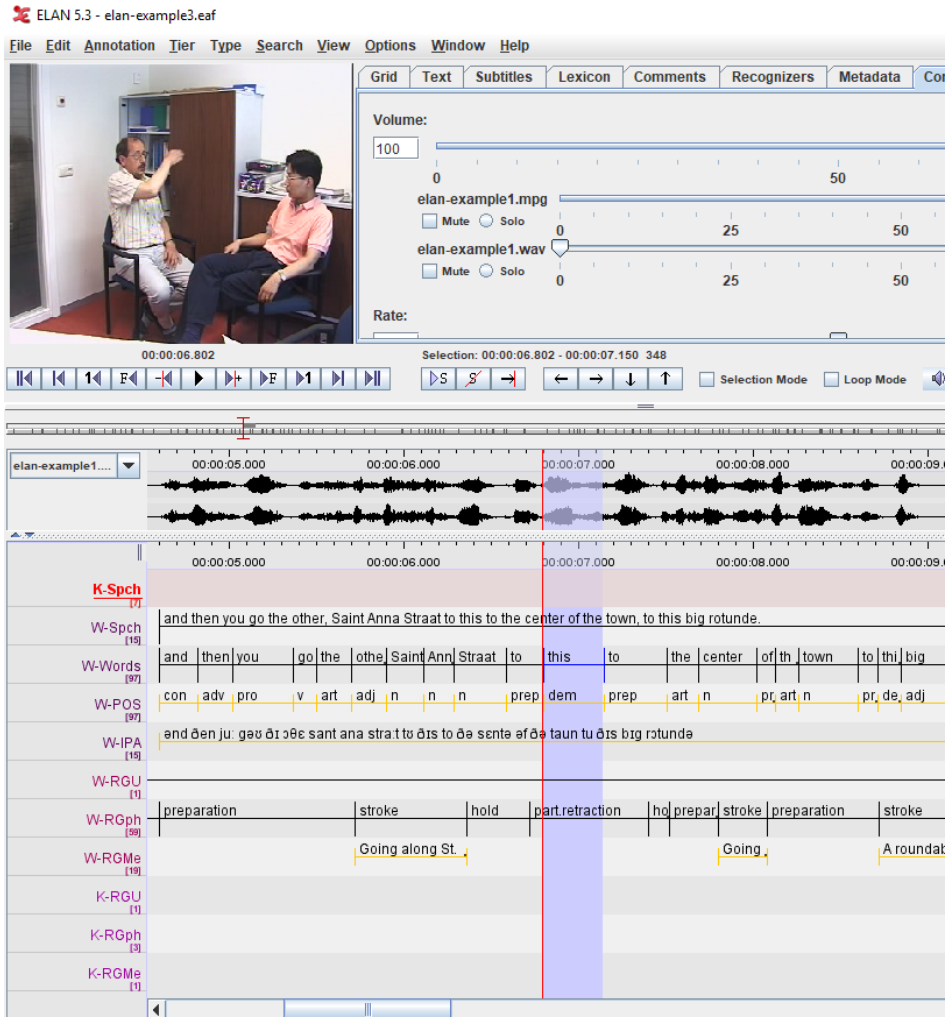
- Chose to clone a small subset of ELAN
  - Time-aligned annotation
  - Used widely in LD and linguistics
  - Old, proven design
  - Moderately complex



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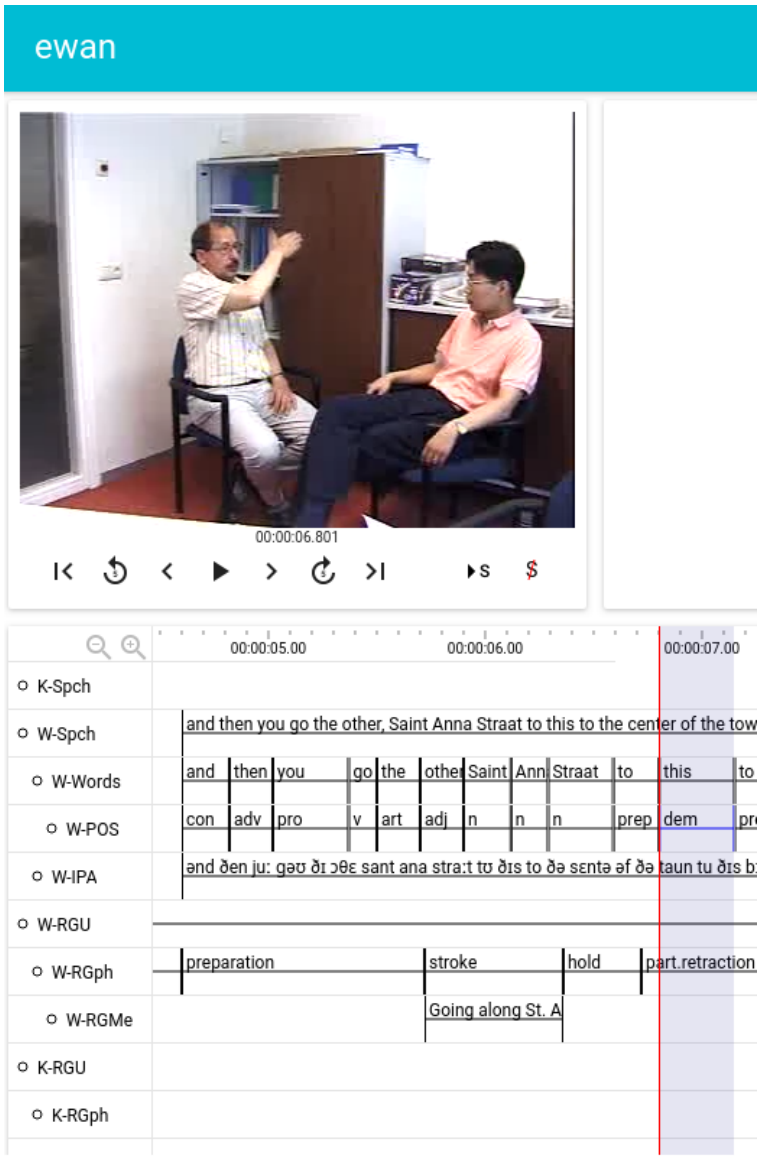
- Database: PouchDB
  - Allows the app to be used offline even though it's in a web browser
- Interface: Material-UI (React)
  - Expansive, high-quality collection of off-the-shelf, mobile-compatible UI components
- See paper or talk to me for more details

Results

- Check it out!
  https://lgessler.com/ewan/



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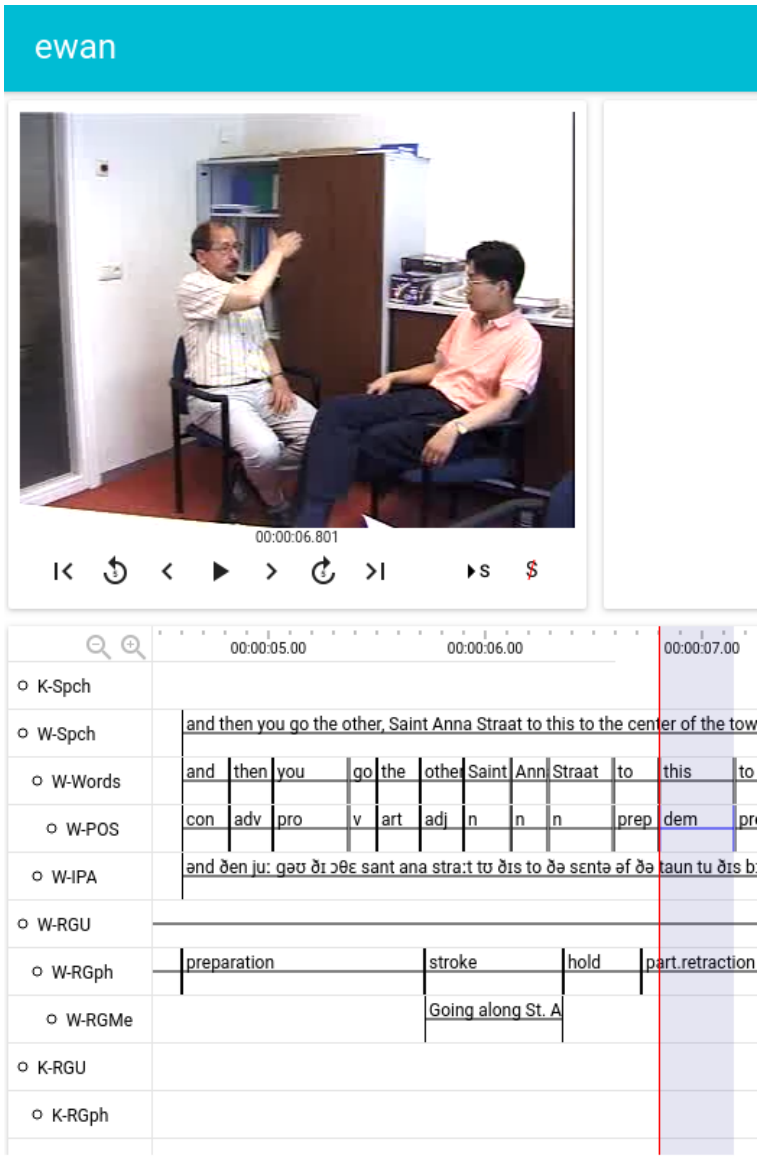
- Created a view-only subset of ELAN (not for real use!)
  - Development completed in only 3 40-hour weeks
  - Offline support achieved
  - Sync with other users provided for free by the database
  - Real-time collaboration greatly facilitated by the database chosen



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- Comparing performance with how it would have gone with "standard" tools:
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- "Experiment" is obviously subjective and limited
- That said, hypothesis seemed corroborated: providing similar features with standard tools would have taken much longer

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Conclusion

- Changing software development methods is key to progress in making comprehensive LD apps succeed because LD apps have so little labor available to them
- LD app developers need to optimize for productivity in their tools
- My three proposed commandments:
  1. Prefer libraries over writing new code
  2. Choose libraries that minimize programming
  3. Choose libraries that are especially designed for the challenges of LD