Research Highlights from UVa ILP Group

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- Research focuses: natural language generation, interpretability, and robustness
- Goal: building efficient and trustworthy NLP systems
- Six Ph.D. students, three of them are co-advised on the intersection with Security, System, and Software Engineering
- Three undergraduate students and three master students
Research Highlights: Natural Language Generation

- Entity-driven story generation [NAACL 2018]

<table>
<thead>
<tr>
<th>Context</th>
<th>All of a sudden, [Emily]₁ walked towards [the dragon]₂.</th>
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<tbody>
<tr>
<td>Current Sentence</td>
<td>[Seth]₃ yelled at [her]₁ to get back but __________________________</td>
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</tbody>
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- Controllable text generation with personal profile [EMNLP 2021]

\[
\alpha = 1: \text{"What kind of music do you play?"} \\
0 < \alpha < 1: \text{"Are you into music, I'm in band, but I do horseback riding when I'm off work."}
\]

- Additional prior work: paraphrase generation and text style transfer [EMNLP 2019, INLG 2021]

- Ongoing research: controllable NLG with limited examples
Explanations beyond bag-of-words representations

▶ Explaining predictions via word compositions [ACL 2020]

▶ Explaining predictions via word interactions [NAACL 2021]

▶ Additional research: applications of explainable NLP, e.g., to improve model robustness [AAAI 2022], to identify suspicious features [Ongoing]