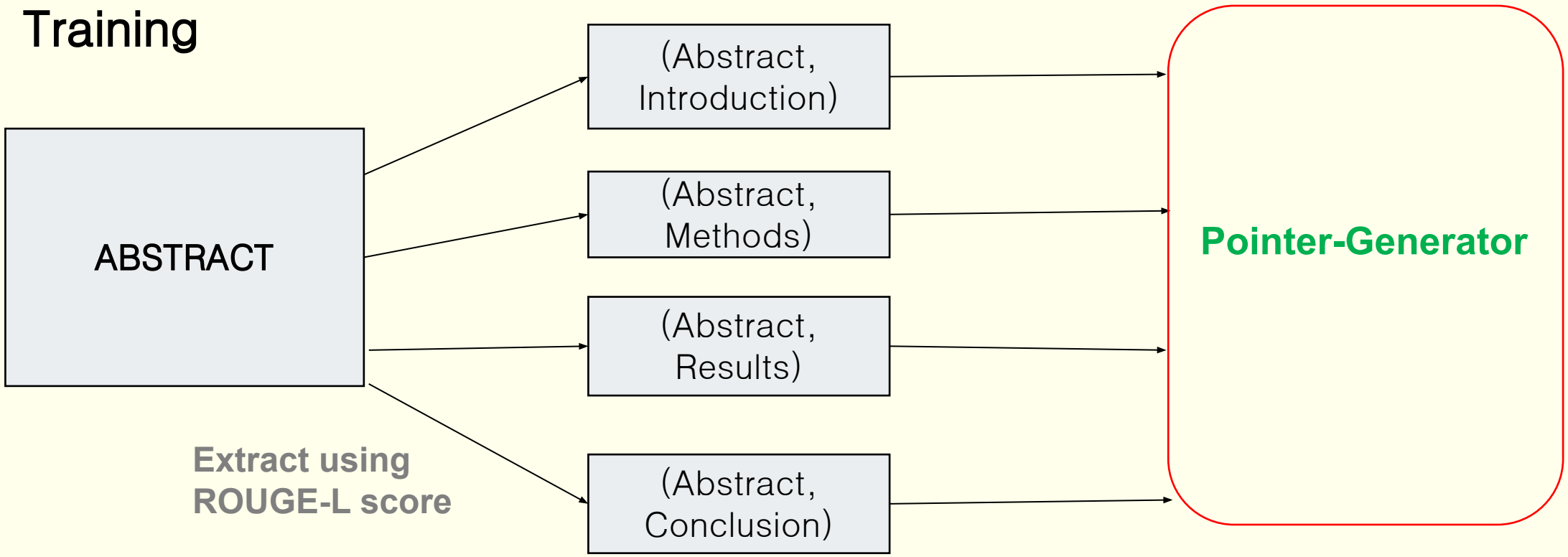
Natural Language Processing

Analysis of DANCER framework for Long Document Summarization

Aathira Manoj (am10245)
Levente Szabo (ls5122)
Minji Kim (mk7773)

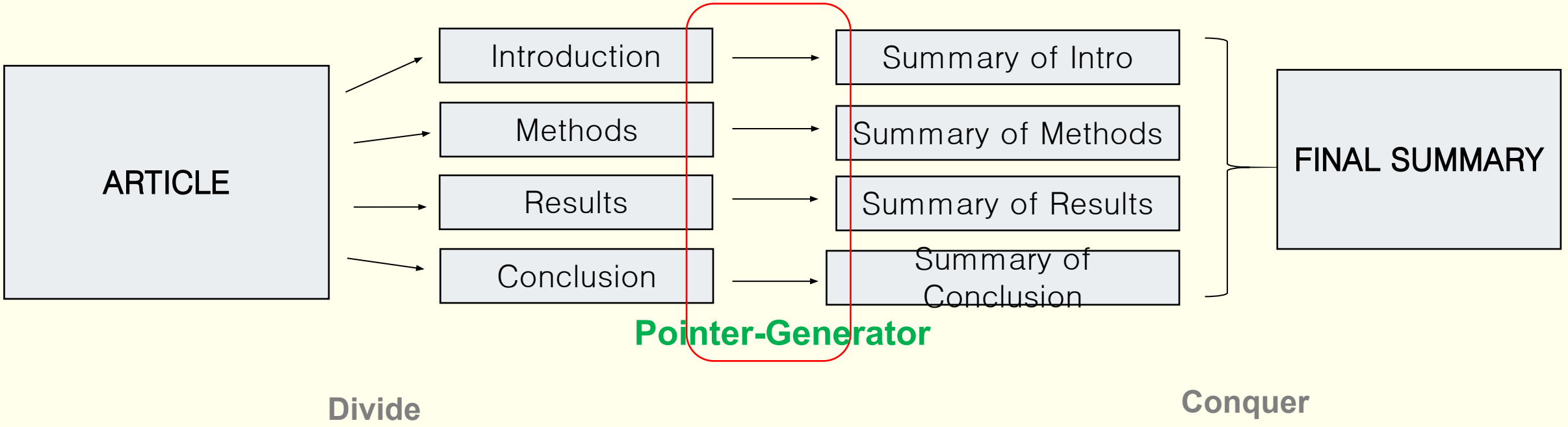
Divide-And-ConquER



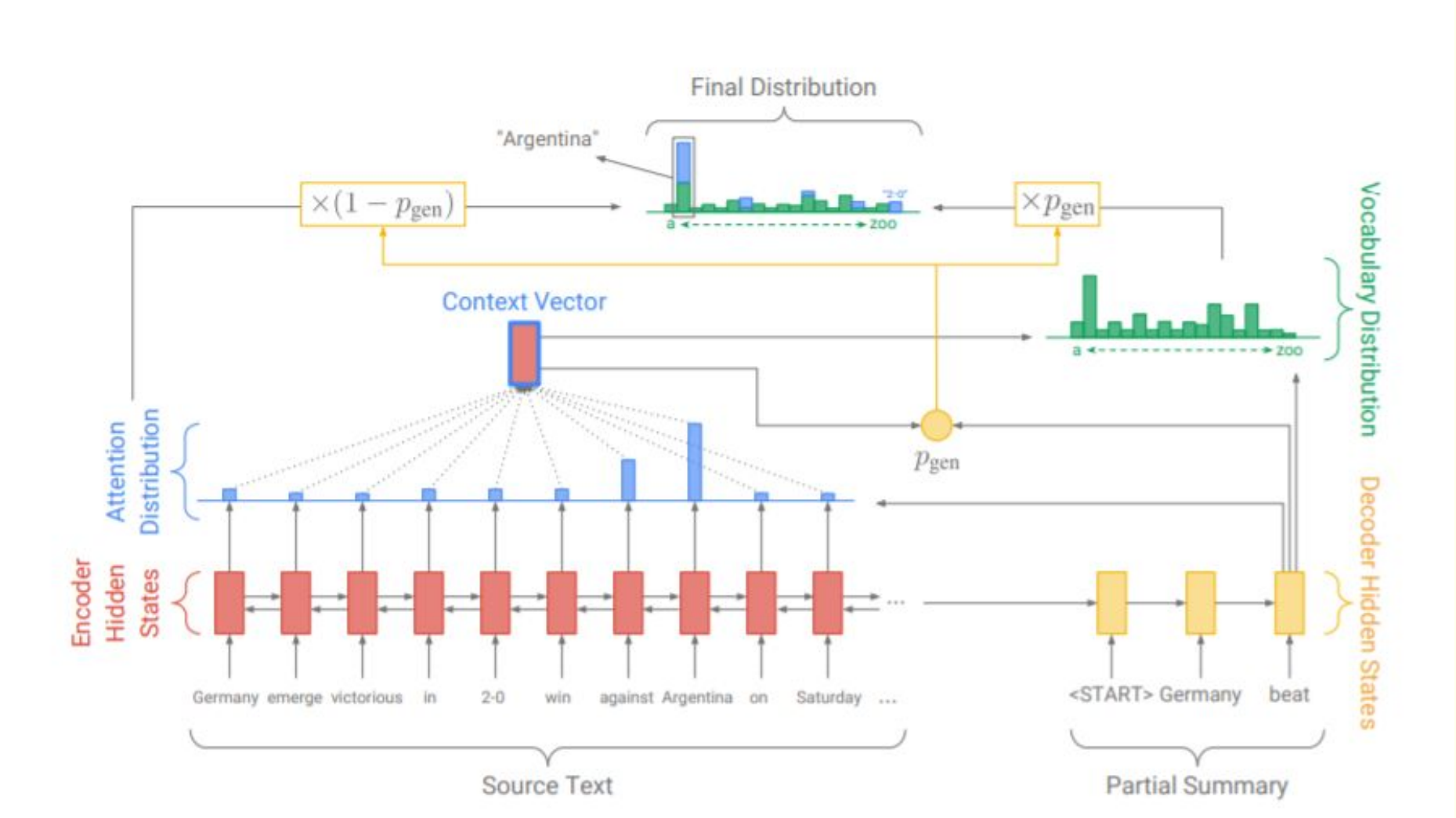
- **Choose** four **sections** from article as training samples to reduce noise
- Use **ROUGE-L score** to match reference summary with these sections
- **Use Pointer Generator** as the summarization model

Divide-And-ConquER

Testing

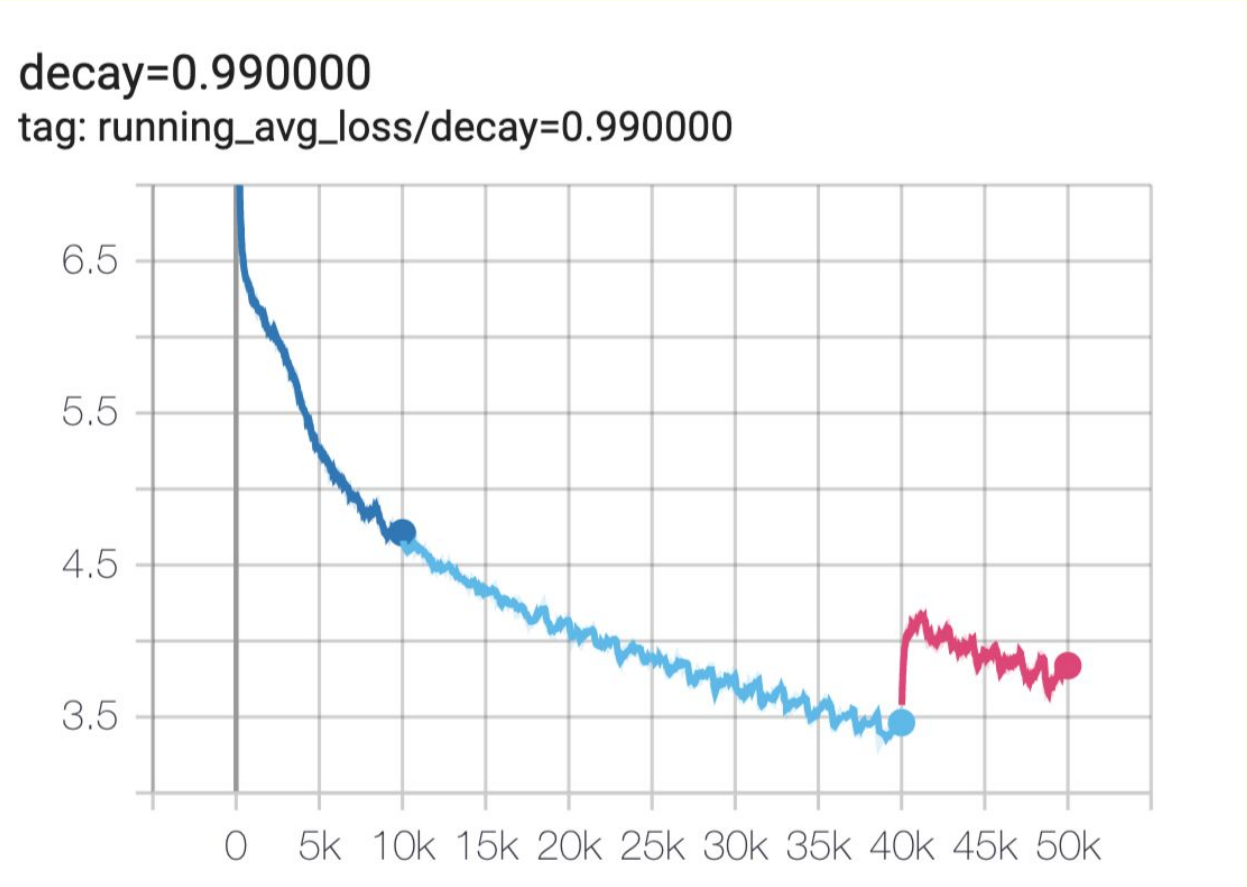


Pointer Generator



Initial Results on ArXiv Dataset

- Training Data: 8000 articles from Arxiv,
- Testing/Validation: 1000 each.
- Initial epochs: **50,000 iterations**, with coverage turned on **after** 40,000 iterations.



Initial Results cont'd - Example

Abstract produced by the model

we show that the nematic texture near the surface pattern is tuned by the periodicity of the nematic cell cell .
we study a nematic liquid crystal confined between a chemically patterned sinusoidal surface and a flat substrate with strong homeotropic anchoring configurations .
we show that a pattern consisting of a nematic liquid crystal confined between a chemically nematic liquid crystal confined between a chemically patterned sinusoidal surface as a function of the anchoring direction imposed by the effective free energy function [eq .
We show that the phase behavior of a nematic liquid crystal confined between a homeotropic texture (h) and a patterned sinusoidal surface with strong homeotropic anchoring and a chemically patterned sinusoidal surface (han) .

Actual Abstract

we study the phase behavior of a nematic liquid crystal confined between a flat substrate with strong anchoring and a patterned substrate whose structure and local anchoring strength we vary . by first evaluating an effective surface free energy function characterizing the patterned substrate we derive an expression for the effective free energy of the confined nematic liquid crystal .
then we determine phase diagrams involving a homogeneous state in which the nematic director is almost uniform and a hybrid aligned nematic state in which the orientation of the director varies through the cell .
direct minimization of the free energy functional were performed in order to test the predictions of the effective free energy method .
we find remarkably good agreement between the phase boundaries calculated from the two approaches .
in addition the effective energy method allows one to determine the energy barriers between two states in a bistable nematic device .

Q&A

What we have taken for this project :

- DANCER framework
  - ROUGE-LCS
  - Pointer-Generator
  - Results