

UNIVERSITÄT WÜRZBURG

Train Once, Use Flexibly: A Modular Framework for Multi-Aspect Neural News Recommendation

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"Hardcoding" Aspectual Requirements in the Model's Architecture & Training Objectives Hinders Flexibility







of news encoder

of news encoder

MANNER: Modular Framework for Multi-Aspect News Recommendation



Linearly Composable Module-Specific Outputs Allow Ad-Hoc Recommendation Objectives at Inference

Standard Content-based Personalization



A-Modules Reshape Embedding Space



Single-Aspect Customization





recommendations and history w.r.t. aspect A

$0.31 \mid 50.56 \mid 50.60 \mid 50.69 \mid 50.74 \mid 50.73 \mid 50.67 \mid 50.58 \mid 50.44 \mid 50.25 \mid 50.61 \mid 50.25 \mid 50.51 \mid 50.51$ 58 50.75 50.89 51.04 51.18 51.05 51.10 50.99 50.83 50.56 50.33 1.00 50.99 51.14 51.25 51.31 51.33 51.28 51.27 51.12 51.08 50.69 0.99 51.17 51.07 51.45 51.52 51.54 51.51 51.43 51.30 51.12 50.90 51.65 51.75 51.82 51.83 51.79 51.70 51.83 51.84 51.83 51.77 51.66 51.92 51.99 52.02 52.01 51.94 51.77 51.63 $1.27 \quad 51.47 \quad 51.65 \quad 51.79 \quad 51.89 \quad 51.96 \quad 51.95 \quad 51.89 \quad 51.83 \quad 51.74$

Multi-Aspect Diversification





→ Weigh individual aspects less than in single-aspect customization to avoid content irrelevance

A-Modules Are Robust to Domain & Language Transfer

