Neha Verma

Email : nverma7@jhu.edu
Website: nverma1.github.io
GitHub : github.com/nverma1

EDUCATION

Johns Hopkins University — Baltimore, MD
Ph.D. in Computer Science – *Advisors: Kevin Duh & Kenton Murray* — 2021–current

Johns Hopkins University — Baltimore, MD
M.S.E. in Computer Science – *Advisors: Kevin Duh & Kenton Murray* — 2021–2023

Yale University — New Haven, CT
B.S. in Computer Science & Mathematics — 2017–2021
  – Distinction in the Major
  – Magna Cum Laude

EXPERIENCE

Meta - Fundamental AI Research — Menlo Park, CA
Ph.D. Research Intern – *Advisor: Maha Elbayad* — Summer 2023

Language and Information Learning Lab (LILY) at Yale — New Haven, CT
Research Assistant – *Advisor: Dragomir Radev* — 2018–2021

CVS Health/Aetna — Remote
Data Science Intern — Summer 2020

Summer Undergrad Math Research at Yale (SUMRY) — New Haven, CT
Research Assistant – *Advisor: Karamatou Yacoubou Djima* — Summer 2019

PAPERS

[1] **N. Verma**, K. Murray, K. Duh. "Merging feed-forward sublayers for compressed Transformers", *preprint*, 2024.

[2] **N. Verma**, M. Elbayad. "Merging text transformer models from different initializations", to appear in *Transactions on Machine Learning Research (TMLR)*, 2024 and *Workshop on High-dimensional Learning Dynamics at ICML (HiLD@ICML)*, 2024.

[3] **N. Verma**, K. Murray, K. Duh. "Exploring geometric representational disparities between multilingual and bilingual translation models", *Proceedings of the 2024 Joint International Conference on Computational Linguistics, Language Resources and Evaluation (LREC-COLING 2024)*, 2024.

[4] E. Salesky, **N. Verma**, P. Koehn, M. Post. "Multilingual Pixel Representations for Translation and Effective Cross-lingual Transfer", *Proceedings of the 2023 Conference on Empirical Methods in Natural Language Processing (EMNLP)*, 2023.

[5] H.L. Xinyuan*, **N. Verma***, B. Odoom, U. Pradeep, M. Wiesner, S. Khudanpur. "JHU IWSLT 2023 Multilingual Speech Translation System Description", *Proceedings of the 20th International Conference on Spoken Language Translation (IWSLT)*, 2023.

[6] A. Hussein, C. Xiao, **N. Verma**, T. Thebaud, M. Wiesner, S. Khudanpur. "JHU IWSLT 2023 Dialect Speech Translation System Description", *Proceedings of the 20th International Conference on Spoken Language Translation (IWSLT)*, 2023.

[7] K. Marchisio, **N. Verma**, K. Duh, P. Koehn. "*IsoVec*: Controlling the Relative Isomorphism of Word Embedding Spaces", *Proceedings of the 2022 Conference on Empirical Methods in Natural Language Processing (EMNLP)*, 2022.

[8] **N. Verma**, K. Murray, K. Duh. "Strategies for Adapting Multilingual Pre-training for Domain-Specific Machine Translation", *Proceedings of the 15th biennial conference of the Association for Machine Translation in the Americas (AMTA)*, 2022.

[9] I. Li, J. Pan, J. Goldwasser, **N. Verma**, W. P. Wong, M. Nuzumlalı, B. Rosand, Y. Li, M. Zhang, D. Chang, R. A, Taylor, H. M. Krumholz, D. Radev. "Neural Natural Language Processing for Unstructured Data in Electronic Health Records: a Review", *Computer Science Review*, 2022.

[10] L. Nan, C. Hsieh, Z. Mao, X. Lin, **N. Verma**, R. Zhang, W. Kryściński, N. Schoelkopf, R. Kong, X. Tang, M. Mutuma, B. Rosand, I. Trindade, R. Bandaru, J. Cunningham, C. Xiong, D. Radev. "FeTaQA: Free-form Table Question Answering", *Transactions of the Association for Computational Linguistics (TACL)*, 2021.

[11] L. Nan, D. Radev, R. Zhang, A. Rau, A. Sivaprasad, C. Hsieh, X. Tang, A. Vyas, **N. Verma**, P. Krishna, Y. Liu. "DART: Open-domain structured data record to text generation", *Proceedings of the NAACL-HLT*, 2021.

[12] R. Zhang, C. Westerfield, S. Shim, G. Bingham, A. Fabbri, W. Hu, **N. Verma**, and D. Radev. "Improving Low-Resource Cross-lingual document Retrieval by Reranking with Deep Bilingual Representations", *Proceedings of the Association for Computational Linguistics (ACL)*, 2019.

SKILLS

- **Programming Languages**: Python (expert), Bash, SQL

- **Frameworks/Toolkits**: PyTorch, fairseq, HuggingFace Transformers, numpy, Dask, LaTeX, Git

TEACHING

- **Undergraduate Learning Assistant**, Yale University

  - Language and Computation (LING 227)   Spring 2021
  - Abstract Algebra (MATH 350)   Fall 2019 & 2020
  - Linear Algebra & Vector Calculus II (MATH 231)   Spring 2019

- **Peer Tutor**, Yale University

  - Fields & Galois Theory (MATH 370)   Spring 2020 & 2021
  - Calculus of Functions of Several Variables (MATH 120)   Fall 2018

Fellowships and Awards

- Phi Beta Kappa — 2021

- Yale College First-Year Summer Research Fellowship in the Sciences & Engineering — 2018

Graduate Courses

- Machine Translation, Advanced Natural Language Processing, Machine Learning, Machine Learning for Trustworthy AI, Self-Supervised Statistical Models, Parallel Computing for Data Science, Vision as Bayesian Inference, Information Extraction from Speech

Service

- **Reviewing**
  - ICLR (2025)
  - ACL Rolling Review (2023, 2024)
  - Computational Linguistics Journal (2022)
  - AMTA 2022

- **Organizing**
  - Machine Translation Marathon of the Americas (MTMA) Organizer — 2024

- **Outreach**
  - Skype a Scientist — 2024
  - JHU CLSP Application Support Program Organizer — 2022–2024
  - Regional NACLO Organizer @ Yale University — 2020–2021
  - Yale Association for Women in Mathematics (AWM) Chapter President — 2020–2021