

Long Phan

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Education

Bachelor of Science in Computer Science, Case Western Reserve University

December 2022


- **Concentration:** Natural Language Processing

Manuscripts and Publications

* denotes equal contribution

In review
EACL "23


MTet: Multi-domain Translation for English and Vietnamese

Chinh Ngo*, TH Trieu*, **Long Phan***, Hieu Tran*, Hieu Nguyen, Minh-Thang Luong 

<https://arxiv.org/abs/2210.05610>

In review
EACL "23

Enriching Biomedical Knowledge for Low-Resource Languages via Large Scale Translation

Long Phan*, Tai Dang*, Hieu Tran*, Vy Phan, Lam D. Chau, TH Trieu 

<https://arxiv.org/abs/2210.05598>

In review
Journal of
Machine Learning
Research

BLOOM: A 176B-Parameter Open-Access Multilingual Language Model

Teven Le Scao, Angela Fan, ... , **Long Phan**, ... , Thomas Wolf

<https://arxiv.org/abs/2211.05100>

NeurIPS "22


The BigScience ROOTS Corpus: A 1.6TB Composite Multilingual Dataset

Thomas Wang, Teven Le Scao, ... , **Long Phan**, ... , Yacine Jernite

<https://openreview.net/forum?id=UoEw6KigkUn>

NAACL SRW "22


ViT5: Pretrained Text-to-Text Transformer for Vietnamese Language Generation

Long Phan, Hieu Tran, Hieu Nguyen, TH Trieu 

<https://arxiv.org/abs/2205.06457>

ACL NLP4Prog "21

CoText: Multi-task Learning with Code-Text Transformer

Long Phan, Hieu Tran, Daniel Le, Hieu Nguyen, James Anibal, Alec Peltekian, Yanfang Ye 

<https://arxiv.org/abs/2105.08645>

PLOS Computational
Biology Journal


HAL-X: Scalable hierarchical clustering for rapid and tunable single-cell analysis

James Anibal, Alexandre G Day, Erol Bahadiroglu, Liam O'Neil, **Long Phan**, Alec Peltekian, Amir Erez, Mariana Kaplan, Grégoire Altan-Bonnet, Pankaj Mehta

doi:[10.1371/journal.pcbi.1010349](https://doi.org/10.1371/journal.pcbi.1010349)

ICONIP "21


SPBERT: An Efficient Pre-training BERT on SPARQL Queries for Question Answering over Knowledge Graphs

Hieu Tran, **Long Phan**, James Anibal, Binh T. Nguyen, Truong-Son Nguyen 

<https://arxiv.org/abs/2106.09997>

arXiv preprint

SciFive: a text-to-text transformer model for biomedical literature

Long Phan, James T. Anibal, Hieu Tran, Shaurya Chanana, Erol Bahadroglu, Alec Peltekian, Grégoire Altan-Bonnet 

<https://arxiv.org/abs/2106.03598>



Presentations / Talks

Submitted
EMNLP "23

Tutorial Proposal: NLP in South-East Asia
 Alham Fikri Aji*, Jessica Zosa Forde*, Alyssa Marie Loo*,
 and 7 others including **Long Phan***



Research Experiences

Twitter, *AI Research Intern*

May 2022 - August 2022

- Worked on Machine Learning Ads Generating project to create value and improve Twitter Ads's Candidate Sourcing
- Developed a Sequential Recommendation with Bidirectional Encoder Representations from Transformer models that leverages transfer learning to predict Ads Tweets interactions
- Achieved internal **state-of-the-art results by 5%** in Tweet Context Generation and Tweet Topic classification

Hugging Face, *NLP Research Volunteer - BigScience Project*

October 2021 - May 2022

- Collaborated with 300+ NLP Researchers worldwide to develop an open-science Multilingual Dataset ROOTS and Language Model BLOOM for the [BigScience workshop](#)
- Participated in the development of the Vietnamese Data co-host team contributing Vietnamese corpus and pipeline

VietAI, *NLP Research Volunteer (Supervised by Minh-Thang Luong)*

October 2020 - present

- VietAI is the largest non-profit AI organization in Vietnam led by Minh-Thang Luong to conduct research on multiple AI topics for the Vietnamese Research Community
- Implemented and built a state-of-the-art English-Vietnamese Machine Translation Model that outperformed Google Translate by more than 2% in BLEU Score
- Released the largest high-quality English - Vietnamese Translation [MTet](#) corpus (4.2M sentence-pairs) that gained attention from both academia and industry with 130+ stars on GitHub Repository
- Led the development of the first monolingual Transformer Encoder-Decoder Vietnamese model ([ViT5](#)) that achieved state-of-the-art results on various Vietnamese NLP tasks

Samsung Research America, *AI Research Intern*

August 2021 - December 2021

- Developed novel Question-Answering models and NLP/NLU methods for use in the Bixby Intelligent Assistant
- Implemented a Siamese BERT-Networks with a custom Multiple Negative Ranking Loss and Context Attention in Intent Classification for over 100+ Bixby skills
- Achieved internal **state-of-the-art by 3% in accuracy** in the Intent Classification tasks for Bixby, Samsung's virtual assistant.

National Cancer Institute, *Deep Learning Research Special Volunteer*

October 2020 - August 2021

- Developed a domain-specific text-to-text transfer transformer ([SciFive](#)) for biomedical NLP tasks
- Proposed a modified Encoder architecture for single-cell data that can be fine-tuned on biological datasets
- Led a team of 6 undergraduate students to win the NIH STRIDES Codeathons

Zalo, *AI Research Intern*

April 2020 - October 2020

- Researched and developed a scalable system translating domain-specific natural language questions into Knowledge Graph's Query for the first Vietnamese virtual assistant KiKi
- Initiated the development of a Named-entity recognition module capturing and resolving date/time text into structured data which was deployed for 80 million users on Zalo, the most popular free message and call application in Vietnam
- Researched and integrated a distilled Hierarchical Transformer model for Vietnamese spelling correction on Laban Key, a Vietnamese Keyboard mobile app with 1 million users.

■ Academic Experiences

Reviewer for Scientific Data - Nature, TU @ COLING 2022

Teaching Assistant, Case Western Reserve University

- CSDS 133 Introduction to Data Science and Engineering, Spring & Fall 2022
- CSDS 393 Software Engineering, Fall 2022

■ Entrepreneurship

Stealth NFT Project, Co-Founder - Tech Lead

2021

- Founded and developed an NFT Project on Solana Blockchain (SOLD OUT in 2 minutes) which used pretrained Transformer models to real-time predict sentiment-price correlation for 5000+ other NFT collections/communities
- Designed and implemented a distributed system for data crawling and model inference that significantly reduced the latency for traders
- Collaborated with various famous NFT Projects including [DeGods](#) and [Stoned Apes](#)