Do-Dzung Vu

Ph.D., NLP& DS

17 March 1985

1292 rue Lafontaine, Laval, Quebec, Canada. H7Y 1N1

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https://scholar.google.com/citations?user=cQHOUPoAAAAJ&hl=en&authuser=1

vudodung85@gmail.com

About me

I am a creative and critical thinking person, my passion is Artificial Intelligence.

Skills

NLP, LLM, Prompt Engineering

Machine learning, Deep learning

React, Redux, Java

R, Python, C&C++, Shell

Agile&Scrum, QA

Mining, Analysis, Visualization

MongoDB, GCP, Hive, SPSS, SQL

Window, Linux, Tex, Office, Git

Scikit, Pandas, Tableu, Vertex, Torch

Pycharm, IntelliJ

Positive⋆4.0 Leading⋆4.5
Management⋆4.5 Training⋆4.5

(*)[The skill scale is from 0 (Fundamental Awareness) to 6 (Expert).]

Interests

- Artificial Intelligence: Reasoning, problem solving, natural language processing, Perception, motion and manipulation, neural network, deep learning.
- Machine learning: Supervised, unsupervised, and reinforcement learning
- Data Scientist: Forecasting, Data mining, text analytic, and statistical analysis

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Experience

4/2023-9/2023 Senior Machine Learning Engineer at Stay22 — Canada

Research and develop the application for improving performance of booking via blog using Tensorflow, Opencv, Pycharm, Elmo, Torch, Spacy, GPT-3, GCP, Vertex

- Lead the system design, get your hands dirty and write code, and ultimately deploy big data and machine learning services. These services define the foundation of R&D processes, supporting science, product development and production
- Work with Docker, FastAPI, PostMan, GPT-3, GCP, Vertex, LLM,PaLM2, Generate AI, Grafana, kedro (ds), imagine, chirp, codey, Prophet
- Work on MLOps with full pipeline

Achievement:

- Create the automatically recognize the entities on the Blog to classify the Hotel Detail Page and Pin Search Result Page which is expected to increased the conversation rate to 20%
- Deploy the location normalization and location extraction service to clean the report from mixpanel which helps much the management system
- Deploy the commission forecasting service to help partners, manager, and supplier to see the potential commission with high accuracy

Problem: R&D team is suspension after 5 months because it is too early for a startup like Stay22

4/2022-4/2023 Lead of Machine learning specialist at JunctionAI — USA

Research and develop the application for marketing using Tensorflow, Opencv, TFX, Pycharm, Elmo, Torch, Spacy

- Establish high standards and share knowledge in performance, scale-up, enterprise system architecture, and engineering best practices with ML pipeline;
- Establish and maintain collaboration with research and business teams to converge on the best solutions;
- Extending prototypes into fully functional, polished solutions ready for internal and/or external use;
- Work with Docker, Tilt, Flask, API, Mock, GPT-J, Clarifai, AWS, S3, Azure, Pycharm, Google Vision, GridSearch, Neuralprophet, Prophet, GCP, AutoML
- Work on MLOps with ML Pipeline (Data Ingestion, Model training, Model testing, Model packaging, and Model registering), ML MetaData, Kubeflow , Deploy (Application testing, Production release) and Monitor (Monitor, Analyze, and Govern)

Achievement:

- Create the automatically generate content for listing on amazon, auto remove background and extract text from the photo
- Deploy the customer sentiment analysis with 85% accuracy and 95% confidence interval, crawl data from Twitter for Federal Project
- Deploy the Machine learning model to engage and analysis the Election campaign such as Nolan chart analysis, Sentiment analysis, Co-occurent network analysis, and WordCloud analysis.

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4/2022-11/2022 **Data Scientist Postdoc at Desjardin Bank** Canada

Research and develop the Ontology Knowledge Base for smart banking dialogue system

- Analysis the Banking product, service for training the smart banking dialogue model
- Deploy the Chatbot based on Ontology Knowledge Base (answer question What, Who, When, Where, How and Why)
- Do research at Desjardin Bank and report to both Desjardin and Université du Québec à Trois-Rivières

Achievement:

- Get 140k CAD fund from Mitacs + Desjardin bank for the project

Problem: Project fund (140k) suspension after 6 months caused prototype product

3/2018-4/2022 **Researching on NLP at Lincs lab, École de technologie supérieure** Canada

Research the application for learning using Tensorflow, Opencv, Pycharm, Elmo, Torch, Spacy

- Natural Language Processing in a smart Dialog system
- PhD thesis: Natural Language Generation for Intelligent Tutoring System

Achievement:

- Obtained the fund from Mitacs and Korbit for 3 years (80K) with the project "Natural Language Generation for Intelligent Tutoring System"

7/2018-11/2021 **Natural language generator at Korbit** Canada

Research the application of generating the Natural language for the Intelligence Tutor System

- Generate natural language contents (Hints, questions, answers)
- Create the API with Microservices for ML applications
- Work with platforms: Rasa, Elmo, Torch, Tensor-flow, Spacy, OpenAI
- Pre-process data: imbalance, unicode, symbol, math, etc.,
- Process data with CUDA, Multiple processors
- Work with AWS, Colab, Google cloud , notebook jupyter

Achievement:

- Published two conferences and one journal papers
- Run and analysis experiment with more than 1000 employee from FPT and integrate the hints to the system which help users' knowledge gain 43 %
- Became the coordinator of running pilot project with one of the biggest ICT company in Vietnam (FPT)
- Work with Korbit since It has only 5 members (much of achievement for innovation startup: CB Insights' AI 100, Korbit Technologies Raises almost 5M)

10/2017-2/2018 **Worked on Artificial Intelligence at Bibliomondo** Canada

Research Shazam Image project and Develop the User Interface of the Timesheet project.

- Research the application by using Python, and Android Studio, Webstorm, IntelliJ IDEA (e.g., Research the Object recognition and Hologram module)
- Create the language locale and UI module by using Reactjs, Momentjs, Redux-sagas at Timesheet project

Achievement:

- Created the prototype of Object Recognition and Hologram module
- Finished the Timesheet project with only 1 member (the project managed the time of user working with both languages French and English)

Problem: Project fund (60K) suspension after a few months caused prototype product

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10/2016
-6/2017 Worked on Civil Infrastructure Platform at Renesas — Vietnam

Apply OS patches and upgrades on a regular basis. Configure/add new services as necessary and maintain a big system based on big data analysis.

- Upgrade and configure system software that supports infrastructure applications or Asset Management applications per project or operational needs (Yocto, bash shell))
- Perform ongoing performance tuning, hardware upgrades, and resource optimization as required

Achievement:

- Lead a internal team with 5 members to auto checking and updating the patch files for CIP platform based on Yocto, bash shell for Renesas Japan
- Lead a team with 20 outsourcing members from FPT for testing the CIP
- Maintain the kernel 4.4.1

3/2015
8/-2016 Worked on crawling data from social network such as Twitter at Dankook University — Korea

Working on creating Machine learning model, making the insightful and supervised application.

- Develop the social media analysis applications (e.g., GeoSocial-Boundary, Detetecting human, spammer, and bot on the social network, sentiment analysis) by using R program.
- Develop IoT applications (e.g., Demo of smart home, smart car; Object tracing and detecting; lane detection applications)

Achievement:

- Published two international conference and one journal papers
- Obtained fund from Brain Korea 21+ (22K), NRF (30K), MSIP (6K).
- Lead a team with 5 members to develop the demo of smart home, smart car, object tracing and lane detection with Raspberry Pi II

2012-2014 Worked on Intelligent Transportation System (ITS) at Hanoi University of Science and Technology. — Vietnam

Creating some applications for the ITS: (Automatically detect and trace a vehicle in the real time)

Achievement:

- Researched, Designed and Integrated the RFID antenna prototype to the vehicle for identification in ITS .

Problem: Project fund (15K) suspension caused prototype product

2009-2012 Worked on internal information technology audit at Tien Phong Bank. — Vietnam

Manage the IT risk and create the security information technology internal audit campaign:

- Create the risk table of information technology in the bank and the attack campaign to the core network.
- Lead the information internal audit strategy in both Head-end and branch site office.

Achievement:

- Predict, detect, and prevent the potential risk (e.g., practical attack Data Recovery Sites, Recheck the verification and authorization policy), in the core banking which helped the system avoid to lose much money (almost 10M)
- Lead team (5 members) of developing Controller Internal Audit platform (build the library risks, matching the procedure and risks, monitor the progress working of auditor, make the plan and generate the management report)

Education

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2018-2022	Ph.D. in Ecole de technologie superieure Natural Language Generation for Intelligent Tutoring System	Canada
2015-2016	(course) Ph.D. student in Dankook University Big data in the social network	Korea
2012-2014	M.Sc. Hanoi University Of Science and Technology Application in Intelligent Transportation System	Vietnam
2009-2012	MBA. Hanoi University Of Science and Technology Improve the Internal Audit process at Tien Phong Bank	Vietnam
2004-2009	Hanoi University Of Sience and Technology The vehicle tracking system by using GSM and GPS.	Vietnam

Publications

2022 F.St-Hilaire, D. D. Vu, I. V. Serban, E. Kochmar, Y. Bengio, "A New Era: Intelligent Tutoring Systems Will Transform Online Learning for Millions", accepted

2021 F.St-Hilaire, N. Burns, R. Belfer, M. Shayan, A. Smofsky, I. V. Serban, E. Kochmar and D. D. Vu, A Comparative Study of Learning Outcomes for Online Learning Platforms, AIED 2021, accepted

2020 Ekaterina Kochmar, D. D. Vu, Robert Belfer, Varun Gupta, Iulian Vlad Serban, Joelle Pineau,Automated Data-Driven Generation of Personalized Pedagogical Interventions in Intelligent Tutoring Systems International Journal of Artificial Intelligence in Education, IJAIED 2020

2020 Cong Tran, D. D. Vu, and Won-Yong Shin, "An Improved Approach for Estimating Social POI Boundaries With Textual Attributes on Social Media", in Knowledge-Based Systems. 2020https://www.sciencedirect.com/science/article/pii/S095070512030839X?utm_campaign=STMJ_AUTH_SERV_PUBLISHED&utm_medium=email&utm_acid=149362166&SIS_ID=&dgcid=STMJ_AUTH_SERV_PUBLISHED&CMX_ID=&utm_in=DM110556&utm_source=AC_

2020 Ekaterina Kochmar, D. D. Vu, Robert Belfer, Varun Gupta, Iulian Vlad Serban, Joelle Pineau, "Automated Personalized Feedback ImprovesLearning Gains in an Intelligent Tutoring System", in Artificial Intelligence Education 2020 https://link.springer.com/chapter/10.1007/978-3-030-52240-7_26

2020 Iulian Vlad Serban, Varun Gupta, Ekaterina Kochmar, D. D. Vu, Robert Belfer,Joelle Pineau,Aaron Courville,Laurent Charlin,Yoshua Bengio, "Korbit: A Large-Scale, Open-Domain,Mixed-Interface Dialogue-Based ITS for STEM", in Artificial Intelligence Education 2020 https://link.springer.com/chapter/10.1007/978-3-030-52240-7_70

2017 D. D. Vu and G. Kaddoum, "A Smart Waste City Management System for Smart Cities Applications," in Advances in Wireless and Optical Communications, Riga, Lativa, Nov. 2017 https://ieeexplore.ieee.org/document/8228538/

2017 W.-Y. Shin* and D. D. Vu, "Density-based estimation of POI boundaries using geo-tagged tweets," Journal of KICS, vol. 42, no. 2, pp. 453-459, February 2017.http://koreascience.or.kr/article/ArticleFullRecord.jsp?cn=GCSHCI_2017_v42n2_453

2016 D. D. Vu, H. To, W.-Y. Shin, and C. Shahabi, "GeoSocialBound: An efficient framework for estimating social POI boundaries using spatio-textual information," in Proceedings of the International ACM SIGMOD Workshop on Managing and Mining Enriched Geo-Spatio Data (GeoRich), San Francisco, CA, June 2016.https://dl.acm.org/citation.cfm?id=2948652

2016 D. D. Vu and W.-Y. Shin, "SocialGeoFence: Detection of POI boundaries using spatio-textual information," in Proceedings of KICS Winter Conference, JeongSeon, Korea, January 2016, pp. 418-419.

2015 D. D. Vu and W.-Y. Shin, "Low-complexity detection of POI boundaries using geo-tagged tweets: A geographic proximity based approach," in Proceedings of the ACM SIGSPATIAL International Workshop on Location-Based Social Netwroks (LBSN), Bellevue, WA, November 2015.https://dl.acm.org/citation.cfm?id=2830663

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Scholarship

2018	Mathematics of Information Technology and Complex Systems (Mitacs) : Fund for Basic Science Research Program in collaboration with industrial partner.
2016	National Research Foundation of Korea (NRF) and Ministry of Science, ICT& Future Planning (MSIP) : Fund for Basic Science Research Program.
2015	Brain Korea 21+ Program.
2009	Samsung Electronic Vietnam Scholarship for the Excellent 5th Year-Student of HanoiUniversity Of Sience and Technology .
2008	Panasonic Scholarship : Pannasonic-Sponsored Class For Embedded Sofware Development .
2004	Hanoi University Of Sience and Technolog scholarship: Scholarship for Excellent Student From 2004 to 2009 .

Social activities

- Volunteer of PMÉI - GRAND RDV des étudiants internationaux, 2017
- Co-founder Vietnamese Technology (Viettech) Community in Montreal, Canada, 2019
- Data science Mentor of MacHacks, 2021
- Volunteer of a snow man in Santa Claus Parade Montreal, 2022

Social Contributions

2012-2014	Prize for people who has many contributions in the E-learning: Topica and ThanhGiong of Knowledge.
2018	Work with Korbit Inc which was one of top watching out startup in Canada 2020 with 5 persons and found by 2017 https://betakit.com/canada-sees-improvement-from-2019-as-eight-canadian-startups-appear-on-cb-insights-ai-100
2020	Korbit is one of the winners of enlightED Awards 2020 https://www.enlighted.education/EN/enlighted-awards
2020	Was nominated for the Mitacs award 2020

Hobbies

- Commitment: Set the goal, approach the goal with an enthusiasm attitude
- Sport: Table tennis, Gym
- Music: Pop, R&B
- Communication: Community activities
- Reading: Books and news on the internet

Reference Letter

- Stay22 https://drive.google.com/file/d/16_UONZoXA7ZNllB3wvPWjAvU5sh9GO0W view?usp=drive_link
- JunctionAI https://drive.google.com/file/d/1mgXjjL0Nwq5D4CfiFdJX-4lLyljZ view?usp=drive_link
- ETSMTL https://dungdovu.github.io/portfolio/static/media/recommandation 20Dung%20Vu-eng.pages.0c258037.pdf