An La

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Education

2021 - present Ms/PhD (Computer Science) at **University of Massachusetts Amherst** (GPA: 3.80/4.0)
Advisor: Professor Hung Le

2013 - 2017 Bachelor's Degree at **Honors Program, VNU-HCMUS, Vietnam** (GPA: 3.57/4.0)
Information Technology, Graduated with distinction.

Experience

2021 - now: Research and Teaching Assistant at Theory CS Group/UMass Amherst

- ⋆ Study and design data structures and algorithms in computational geometry, apply to machine learning and approximation problems.
- ⋆ Designed a dynamic data structure for locality sensitive ordering in doubling metrics, obtained several algorithmic applications, notably the first dynamic k-fault tolerant spanner in doubling metrics with optimal sparsity and time per update.
- ⋆ Teaching Assistant: Algorithms for Data Science, Advanced Algorithms.

2020 - 2021: Data Scientist at PrimeData, Vietnam github/anla11/analytic_marketing

- ⋆ Designed and implemented an automatic framework for segment analytics.
- ⋆ Generated insightful segments of users without manual analysis for algorithmic marketing applications, such as business identity, customer engagement campaign.
- ⋆ Technical skills: *quantitative analysis*, *Bayesian machine learning* and *probabilistic programming*.

2017 - 2019: Data Scientist at FPT Telecom, FPT Group, Vietnam github/anla11/adaptive_cf_recsys

- ⋆ Designed and implemented a graph-based model dealing with multiple evaluation metrics for the recommender system of fptplay.vn.
- ⋆ Increased precision by 6% while maintaining diversity, coverage, and congestion.
- ⋆ Technical skills: *content-based analysis and modelling, user-centric analysis and collaborative-filtering modelling, graph-based algorithms, performance evaluation analysis.*

2016 - 2017: Implement image-processing algorithms with standard techniques using OpenCV

- ⋆ Style extraction using GIST and LAB features: https://github.com/anla11/style-extraction-for-images
- ⋆ Text region extraction with morphology-based methods: https://github.com/anla11/text-region-extract
- ⋆ Image enhancement: https://github.com/anla11/image-enhancement

Publications

La, A., & Le, H. (2024, August). *Dynamic Locality Sensitive Orderings in Doubling Metrics*.

La, A., & Le, H. (2024, August). *New weighted additive spanners*.

La, A., Vo, P., & Vu, T. (2019, July). *Adaptive Collaborative Filtering for Recommender System*. In International Conference on Conceptual Structures (pp. 117-130).

La, A. N. T.*, Nguyen, D. P.*, Pham, N. M., & Vu, Q. H. (2018). *Multi-modal video retrieval using Dilated Pyramidal Residual network*. Science and Technology Development Journal-Natural Sciences, 2(5), 138-143. [1]

Skills

Theory	Design data structures/algorithms, statistics and probability, quantitative analysis and modeling.
Programming	5+ years of implementing projects with Python: build machine learning models (Tensor Flow, PyTorch, Scikit-Learn); process, analyze and visualize data (Numpy, Pandas, Seaborn). Proficient in C++ to implement algorithms in competitive programming contests and Image Processing project (with OpenCV).
Other	Git, Latex, Docker, Linux.

[1] *These authors contributed equally to the work.

Academic Activities

June. 2024	DIMACS Tutorial on Fine-graned Complexity
Jan. 2024	SODA 2024 Symposium on Discrete Algorithms
Nov. 2022	FOCS 2022 IEEE 63rd Annual Symposium on Foundations of Computer Science
Aug. 2022	FODSI Sublinear algorithms summer school and workshop
June. 2019	Online attending and presenting at 24^{th} International Conference on Conceptual Structures
Aug. 2017	Attending the 3^{rd} Workshop on Statistical Modeling and Applications at VNU-HCMUS Topic: Bayesian Models Inference and Statistical Decision Making

Selective Courses

2021-2023	Algorithms with Predictions, Randomized Algorithms, Algorithms for Data Science, Probabilistic Graphical Model, Distributed and Operating Systems at UMASS.
2020	Bayesian Methods for Machine Learning - National Research University Higher School of Economics
2019	Probabilistic Graphical Models 1: Representation - Stanford University
2018	Bayesian Statistics: Techniques and Models - University of California, Santa Cruz
2018	Bayesian Statistics: From Concept to Data Analysis - University of California, Santa Cruz
2016	Parallel Programming with GPU, Data Storing and Recovering at VNU-HCMUS

Honors and Awards

Dec. 2016	National Vietnam award for Outstanding Female Students in Science and Technology
Aug. 2016	Awards from Facebook Hackathon Vietnam 2016 1^{st} *prize* of Most Innovative Product 2^{nd} *prize* of Best Product in Facebook Marketing Category
2012 - 2014	Vallet Scholarship (South Region) for Excellent Students - https://rvn-vallet.org/
2014	2^{nd} *prize* in ACM-ICPC Vietnam National 1^{st} Round
2013	3^{rd} *prize* in Informatics at the Vietnam National Excellent Student Exam
2012	*Honourable Mention* in Informatics at the National Excellent Student Exam
2011	*Silver Medal* in Informatics at The Traditional 30/4 Olympic Competition