

# An La

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## EDUCATION

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- 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.  
Final Year Thesis: *Deep Neural Network for Vietnamese News Recognition* (Grade: 10.0/10.0).  
Advisor: Professor Vu Hai Quan.

## PUBLICATIONS

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- La, A., & Le, H.** (2024, August). *Dynamic Locality Sensitive Orderings in Doubling Metrics*.  
<https://arxiv.org/abs/2408.14617>.
- La, A., & Le, H.** (2024, August). *New weighted additive spanners*. <https://arxiv.org/abs/2408.14638>.
- La, A., Vo, P., & Vu, T.** (2019, July). *Adaptive Collaborative Filtering for Recommender System*. In International Conference on Conceptual Structures (pp. 117-130). Springer, Cham.  
[https://doi.org/10.1007/978-3-030-23182-8\\_9](https://doi.org/10.1007/978-3-030-23182-8_9)
- 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.  
<https://doi.org/10.32508/stdjns.v2i5.789><sup>1</sup>

## EXPERIENCE

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- 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.
  - ★ Introduced a dynamic data structure for locality sensitive ordering, 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.AI, 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 deployed 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>

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<sup>1</sup>\*These authors contributed equally to the work.

## SKILLS

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|--------------------|--|
| Theoretical skills | Design data structures/algorithms/models, statistics and probability.  |
| Programming skills | 5+ years of developing projects with Python: implement machine learning models (Tensor Flow, PyTorch, Scikit-Learn); process, analyze and visualize data (Numpy, Pandas, Seaborn).<br>Proficient in C++ to implement algorithms in competitive programming contests and Image Processing (OpenCV). |
| Other              | Git, Latex, Docker, Linux.   |

## ACADEMIC ACTIVITIES

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| June. 2024 | <a href="#">DIMACS Tutorial on Fine-grained Complexity</a>   |
| Jan. 2024  | <a href="#">SODA 2024 Symposium on Discrete Algorithms</a>   |
| Nov. 2022  | <a href="#">FOCS 2022 IEEE 63rd Annual Symposium on Foundations of Computer Science</a>  |
| Aug. 2022  | <a href="#">FODSI Sublinear algorithms summer school and workshop</a>  |
| June. 2019 | Online attending and presenting at <a href="#">24<sup>th</sup> International Conference on Conceptual Structures</a>   |
| Aug. 2017  | Attending the 3 <sup>rd</sup> Workshop on Statistical Modeling and Applications at VNU-HCMUS<br>Topic: Bayesian Models Inference and Statistical Decision Making |

## SELECTIVE COURSES

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

## HONORS AND AWARDS

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