Tu Anh-Nguyen

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Interests

Optimizations, Polyhedral Theory, Graph Theory
Linear and Integer Programming, Neural Network, Operational Research

Education

2020 – Present
Rice University, *Department of Computational and Applied Mathematics*.
Doctoral Student, Applied Mathematics.
GPA: 4.0/4.0.
Advisor: Dr. Joey Huchette – `https://www.joehuchette.com/`

2015 – 2020
Hanoi University of Science and Technology, *School of Applied Mathematics and Informatics*.
B.Eng., Applied Mathematics, Talented Program.
GPA: 3.64/4.00 - Top 1% in Class of 2020 and ranked 1st in the department.

2011 – 2014
Vietnam National University - High School for Gifted Students, *Mathematics Program*.
High School Diploma.

Research Experience

Jun 2019 – Sep 2019
Research Intern, *RIKEN Center for Advanced Intelligence Project*, Tokyo, Japan.
Research on Communities Detection on Link Stream at the Language Information Access Technology Team.

Jun 2017 – May 2020
Student Research Assistant, *School of Applied Mathematics and Informatics*, Hanoi, Vietnam.
Research on graph theory. Our result shows that the dominating set problem is polynomial in (fork, Z_2)-free graphs. Our research was published at the International Conference on Combinatorics, Graph Theory and Applications on April $15^{th} - 17^{th}, 2018$, Hanoi, Vietnam.

Work Experience

Jan 2019 – Jun 2019
Machine Learning Engineer Intern, *ITSOL*, Hanoi, Vietnam.
Built machine learning applications for curriculum vitae information extraction and recommendation systems matching potential candidates with an employer.

Jan 2018 – Jan 2019
Machine Learning Engineer Intern, *Websosanh.vn*, Hanoi, Vietnam.
Built neural networks for e-commerce applications. Designed system to classify products based on names. Used Doc2Vec to obtain high-quality product name vectors leading to an increase in accuracy from 85% to 90%.

Jan 2017 – August 2017
Tester and App Developer, *Skymap Global*, Hanoi, Vietnam.
Software product tester. Joined in building mobile application that supports sale manager to keep track of their customers' information.

Publications

Conference
Minimum Dominating set problems in $(fork, \overline{P_5})$*-free and* $(claw, P_5)$*-free graphs*, **Tu Nguyen** and Ngoc C. Le.
International Conference on Combinatorics, Graph Theory and Applications, April $15^{th} - 17^{th}, 2018$, Hanoi, VN.

Preprint
Community Detection in Link Stream, **Tu Nguyen**, Tiphaine Viard, and Takanori Maehara.
To appear.

Awards and Scholarships

2020 – 2025
Rice Graduate Fellowship.
Full funding for PhD studies.

2017 – 2019	**Hanoi University of Science and Technology Scholarship for Outstanding Students**. Selected 100 from 30,000 students. Awarded 2 times: 2017-2018 and 2018-2019.
2016 – 2019	**National Program: Development of Mathematics Scholarship**. Selected students who have exceptional performance in Mathematics in all Vietnamese universities. Awared 3 times: 2016-2017, 2017-2018, and 2018-2019.
Apr 2018	**Travel award**, *Workshop on Graph Theory of ICCGTA 2018*, Hanoi, Vietnam.
Apr 2017	**1st prize in Algebra**, *25th National Mathematical Olympiad for University Students*.
Jan 2017	**1st prize**, *Hanoi University of Science and Technology Mathematical Competition*.
Apr 2016	**2nd prize in Algebra**, *24th National Mathematical Olympiad for University Students*.
Jan 2016	**1st prize**, *Hanoi University of Science and Technology Mathematical Competition*.
Mar 2014	**Runner-up prize**, *Hanoi National University, High School Annual Research Conference*. On Extending Melenaus' Cutting Line Theorem.

Certificates

TOEFL iBT	**106/120**	*Test date: September 21st, 2019*
GRE General	**V: 154	Q: 170	A: 3.5**	*Test date: August 14th, 2019*
GRE Math	**860** (87th-percentile)	*Test date: October 26th, 2019*

Programming Languages and Frameworks

Programming	**Python, Julia, MATLAB, CPLEX, C++**	*9 class projects and 2 intern projects*
Framework	**Gurobi, PyTorch, JuMP, Scikit-Learn, TensorFlow**	*1 class project and 2 intern projects*

Other Activities

2020 - 2021	**Graduate Student Association Representative** at Department of Computational and Applied Mathematics, Rice University
Jan 2020	**Graph Theory Seminar** at VIASM. Presentation title: Minimum Dominating Set in some classes of graphs
Dec 2019	**Combinatorics Mathematics Seminar** at School of Applied Mathematics and Informatics. Presentation title: Iterative Method on Submodular Maximization
Oct 2019	**Graph Theory Seminar** at School of Applied Mathematics and Informatics. Presentation title: Approximating Minimum Dominating Set
Oct 2018	**Graph Theory Seminar** at School of Applied Mathematics and Informatics. Presentation title: Review on Independent Set Problem
Apr 2018	**Student volunteer** for organizing the IGCCTA 2018 conference
Aug 2017	**Graph Theory Seminar** at School of Applied Mathematics and Informatics. Presentation title: Graph Modular Decomposition and Clique Separation
Mar 2017	**Annual SAMI Science Conference**. Presentation title: On independent set problem
Sep 2016	**Graph Theory Seminar** at School of Applied Mathematics and Informatics. Presentation title: Chordal Graph Properties

Languages

Vietnamese	**Native**
English	**Fluent**
German	**Basic**