

Tu Nguyen

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Research Interests

Graph Theory, Discrete/Convex Optimization, and Functional Analysis.

Education

- 2015 – 2020 (expected) **Hanoi University of Science and Technology, School of Applied Mathematics and Informatics.**
B.Eng., Applied Mathematics, Talented Program (highest honour).
Current CPA: 3.60 / 4.00 (major: 3.92 / 4.00)
- 2011 – 2014 **Hanoi National University - High School for Gifted Students, Mathematics Program.**
High School Diploma.

Research Experience

- Jun 2019 – **Research Intern, RIKEN Center for Advanced Intelligence Project,** Tokyo, Japan.
Sep 2019 Research on Communities Detection on Link Stream at the Language Information Access Technology Team.
- 2017 – **Student Research Assistant, School of Applied Mathematics and Informatics,** Hanoi, Vietnam.
Present Research on graph theory. Our result shows that the dominating set problem is polynomial in $(\text{fork}, \mathbb{Z}_2)$ -free graphs. Our research was published at the International Conference on Combinatorics, Graph Theory and Applications on April 15th – 17th, 2018, Hanoi, Vietnam.

Publications

- Conference *Minimum Dominating set problems in $(\text{fork}, \overline{P_5})$ -free and (claw, P_5) -free graphs,* **Tu Nguyen** and Ngoc C. Le.
International Conference on Combinatorics, Graph Theory and Applications, April 15th – 17th, 2018, Hanoi, VN.
- Preprint *Community Detection in Link Stream,* **Tu Nguyen**, Tiphaine Viard, and Takanori Maehara.
To appear.

Awards and Scholarships

- 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.
Awarded 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.

Work Experience

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

- Jan 2018 – **Machine Learning Engineer Intern**, *Websosanh.vn*, Hanoi, Vietnam.
 Jan 2019 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 – **Tester and App Developer**, *Skymap Global*, Hanoi, Vietnam.
 August 2017 Software product tester. Joined in building mobile application that supports sale manager to keep track of their customers' information.

Certificates

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

Programming Languages and Frameworks

Scripting	Python, MATLAB, Julia, CPLEX	7 class projects and 2 intern projects
Framework	PyTorch, Scikit-Learn, TensorFlow, JuMP	1 class project and 2 intern projects
Programming	C++	2 class projects

Undergraduate Technical Courses

Mathematics	Analysis I,II,III; Linear Algebra and Abstract Algebra; Complex Analysis; Functional Analysis; Probability and Statistics; Numerical Analysis; Discrete Mathematics; Optimization; Partial Differential Equations; Finite Element Methods; Fuzzy Logic.
Informatics	Advanced Data Structure and Algorithms; Computer network and Security; Database; Encryption and Algorithm Complexity.
Others	Physics; Management.

Other Activities

- Jan 2020 **Graph Theory Seminar** at VIASM.
 Scheduled presentation: 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
Japanese	Basic

"I hope we'll be able to solve these problems before we leave."
Paul Erdős