Duc A. Hoang

Curriculum Vitae
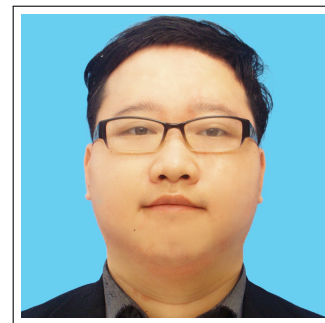
Personal Information

Full name (Vietnamese)	Hoàng Anh Đức.
Name (in publications)	Duc A. Hoang.
Name (Japanese Katakana)	ホアンアンドゥック.
Nationality	Vietnamese.
Gender	Male.
Languages	Vietnamese (Native) and English (Professional working proficiency).

Current Position

As of February 01, 2023, I am a **Lecturer** at Faculty of Mathematics, Mechanics, and Informatics, VNU University of Science (Hanoi, Vietnam).

Contact Information

Email	hoanganhduc@hus.edu.vn
Email	anhduc.hoang1990@gmail.com
Institution	Faculty of Mathematics, Mechanics, and Informatics, VNU University of Science, 334 Nguyen Trai, Thanh Xuan, Hanoi, 100000 Vietnam.
Personal Webpage	https://hoanganhduc.github.io/
ORCID	0000-0002-8635-8462

Research Interests

o Graph Algorithms.
o Combinatorial Reconfiguration.

Education

Apr. 2015 - Jun. 2018 **PhD Degree in Information Science**
o **Institution:** Japan Advanced Institute of Science and Technology (Ishikawa, Japan).
o **Supervisor:** Ryuhei UEHARA.
o **Thesis Title:** Independent Set Reconfiguration and Related Problems for Some Restricted Graphs.

Apr. 2013 - Mar. 2015	**Master Degree in Information Science** ○ **Institution:** Japan Advanced Institute of Science and Technology (Ishikawa, Japan). ○ **Supervisor:** Ryuhei UEHARA. ○ **Thesis Title:** The Independent Set Reconfiguration Problem on Some Restricted Graphs.
Sep. 2008 - Mar. 2013	**Bachelor Degree in Mathematics** ○ **Institution:** VNU University of Science (Hanoi, Vietnam). ○ **Thesis Advisor:** Thi Ha Duong PHAN. ○ **Thesis Title:** The Matrix-Tree Theorem and Some Related Problems. ○ Advanced Undergraduate Program in Mathematics.

Employment

Feb. 01, 2023 - present	**Lecturer** Department of Informatics, Faculty of Mathematics, Mechanics, and Informatics, VNU University of Science (Hanoi, Vietnam).
Jun. 16, 2021 - Jan. 31, 2023	**Postdoctoral Researcher** Group of Computer Algorithms, Graduate School of Informatics, Kyoto University (Kyoto, Japan). Supervisor: Shin-ichi MINATO. B01 Group, AFSA Project (supported by KAKENHI Grant Number 20H05964).
Apr. 01, 2021 - Jun. 15, 2021	**Research Assistant** Kyutech Algorithms Group, School of Computer Science and Systems Engineering, Kyushu Institute of Technology (Fukuoka, Japan). Supervisor: Toshiki SAITOH.
Apr. 01, 2019 - Mar. 31, 2021	**Postdoctoral Researcher** Kyutech Algorithms Group, School of Computer Science and Systems Engineering, Kyushu Institute of Technology (Fukuoka, Japan). Supervisor: Toshiki SAITOH.
Sep. 05, 2018 - Dec. 31, 2018	**Lecturer** Department of Informatics, Faculty of Mathematics, Mechanics, and Informatics, VNU University of Science (Hanoi, Vietnam).

Research Grants

May 07, 2025 - May 07, 2027	**VNU University of Science VNU-Level Grant** ○ **Grant Number:** QG.25.07. ○ **Project Title:** A study on reconfiguration problems from algorithmic and graph-theoretic perspectives. (Nghiên cứu về các bài toán tái cấu hình từ góc độ thuật toán và lý thuyết đồ thị.) ○ **Role:** Principal Investigator. ○ **Other Members:** Nguyễn Hải Vinh (VNU-HUS). ○ **Amount:** 350,000,000 VND.
Jul. 28, 2023 - Jul. 28, 2024	**VNU University of Science Basic-Level Grant** ○ **Grant Number:** TN.23.04. ○ **Project Title:** On the complexity of some reconfiguration problems on graphs under some distance constraints. (Độ phức tạp tính toán của một số bài toán tái cấu hình trong đồ thị với một số điều kiện về khoảng cách.) ○ **Role:** Principal Investigator. ○ **Amount:** 30,000,000 VND.

Aug. 30, 2019 - Mar. 31, 2021	**JSPS KAKENHI Grant-in-Aid for Research Activity start-up** ○ **Grant Number:** 19K24349. ○ **Project Title:** A study on reconfiguration problems under Token Sliding and their applications. ○ **Role:** Principal Investigator. ○ **Amount:** 2,860,000 JPY.

Awards

Jun. 22, 2018	JAIST Outstanding Performance Award for doctoral students.

Research Visits

Jan. 01, 2024 - Dec. 31, 2024	Vietnam Institute for Advanced Study in Mathematics (Hanoi, Vietnam). Supported by VIASM's one-year postdoctoral fellowship.
Apr. 07, 2021 - Apr. 08, 2021	Group of Computer Algorithms (Minato Lab), Graduate School of Informatics, Kyoto University (Kyoto, Japan). Host: Shin-ichi MINATO.
Dec. 23, 2019 - Dec. 25, 2019	Faculty of Advanced Science and Technology, Kumamoto University (Kumamoto, Japan). Host: Yota OTACHI.
Apr. 01, 2016 - Jul. 08, 2016	Algorithm Theory Lab, Graduate School of Information Sciences, Tohoku University (Sendai, Japan). Host: Xiao ZHOU and Takehiro ITO.

Research Activities

Research Mentor	○ Vietnam Polymath REU (2023-2025)
(Sub-)Reviewer	**Journal** ○ Electronic Journal of Graph Theory and Applications (2025) ○ Graphs and Combinatorics (2023) ○ Electronic Journal of Combinatorics (2023) ○ Journal of Information Processing (2020) ○ Theoretical Computer Science (2018, 2019, 2021, 2025) ○ Discrete Applied Mathematics (2018) ○ IEICE TRANSACTIONS on Fundamentals of Electronics, Communications and Computer Sciences (2017, 2019) **Conference** ○ WALCOM 2026 ○ WALCOM 2025, WG 2025, MFCS 2025 ○ ICALP 2024 ○ ISAAC 2023 ○ ISAAC 2022 ○ WALCOM 2021, ICALP 2021, MFCS 2021 ○ WG 2020, COCOON 2020, ISAAC 2020 ○ MFCS 2019 ○ COCOON 2018 **Other Reviews** ○ AMS Mathematical Reviews/MathSciNet (2024 -) ○ zbMATH Open (2025 -)

Students

Nguyễn Thị Thanh Hương	VNU University of Science, Hanoi, Vietnam (Nov. 2024 - Jun. 2025, `Undergraduate Thesis`, on "Xây dựng các trường hợp khó với kích thước tùy chỉnh cho bài toán tái cấu hình các tập độc lập trong đồ thị")
Nghiêm Quốc Hưng	VNU University of Science, Hanoi, Vietnam (Nov. 2024 - Jun. 2025, `Undergraduate Thesis`, on "Bài toán tái cấu hình tập độc lập trên đồ thị có hướng")
Phùng Thiên Phước	Christian Brothers University, USA (Nov. 2024 - Nov. 2025, Vietnam Polymath REU)
Phan Hữu An	Nanyang Technological University, Singapore (Oct. 2023 - Oct. 2024, Vietnam Polymath REU)
Lâm Nhật Quân	HCMC University of Science, Vietnam (Oct. 2023 - Oct. 2024, Vietnam Polymath REU)
Nguyễn Ánh Hồng	VNU University of Science, Hanoi, Vietnam (Oct. 2023 - Jun. 2024, `Undergraduate Thesis`, on "Đồ thị tái cấu hình các tập độc lập và các tính chất liên quan")
Phan Minh Vũ	VNU University of Science, Hanoi, Vietnam (Oct. 2023 - Jun. 2024, `Undergraduate Thesis`, on "Đồ thị tái cấu hình các tập không dư thừa và một số bài toán liên quan")
Đào Xuân Thắng	VNU University of Science, Hanoi, Vietnam (Oct. 2023 - Jun. 2024, `Undergraduate Thesis`, on "Đồ thị tái cấu hình các đường đi ngắn nhất")

Teaching Experiences

A list of courses I have participated in as a **Lecturer** (**Giảng viên**) or **Teaching Assistant** (**Trợ giảng**). The courses in English (Vietnamese) are described in English (Vietnamese).

Academic Year 2025-2026

Sep. 04, 2025 - Dec. 28, 2025	**Lecturer** – VNU-HUS MAT1206E: Introduction to Artificial Intelligence
Sep. 04, 2025 - Dec. 31, 2025	**Giảng viên** – VNU-HUS MAT3508: Nhập môn Trí tuệ nhân tạo
Sep. 04, 2025 - Dec. 26, 2025	**Trợ giảng** – VNU-HUS MAT3302: Toán rời rạc (bài tập)
Sep. 04, 2025 - Jan. 10, 2026	**Giảng viên** – VNU-HUS MAT3500 3: Toán rời rạc

Academic Year 2024-2025

Jul. 01, 2025 - Aug. 15, 2025	**Lecturer** – VNU-HUS MAT3500: Toán rời rạc
Feb. 05, 2025 - Jun. 03, 2025	**Teaching Assistant** – VNU-HUS MAT1206E: Introduction to Artificial Intelligence (exercises)
Feb. 05, 2025 - Jun. 03, 2025	**Giảng viên** – VNU-HUS MAT3500: Toán rời rạc
Sep. 05, 2024 - Dec. 16, 2024	**Teaching Assistant** – VNU-HUS MAT3508: Nhập môn Trí tuệ nhân tạo (bài tập)
Sep. 05, 2024 - Jan. 13, 2025	**Lecturer** – VNU-HUS MAT3500 2: Toán rời rạc

Academic Year 2023-2024

Jul. 01, 2024 - Aug. 09, 2024	**Lecturer** – VNU-HUS MAT3500: Toán rời rạc
Jan. 22, 2024 - Jun. 20, 2024	**Teaching Assistant** – VNU-HUS MAT2315: Phương pháp nghiên cứu khoa học (tiểu luận)
Jan. 22, 2024 - Jun. 20, 2024	**Lecturer** – VNU-HUS MAT3500 2: Toán rời rạc
Jan. 22, 2024 - Jun. 20, 2024	**Lecturer** – VNU-HUS MAT3500 1: Toán rời rạc
Feb. 6, 2023 - Jun. 02, 2023	**Teaching Assistant** – VNU-HUS MAT2315: Phương pháp nghiên cứu khoa học (tiểu luận)
Feb. 6, 2023 - Jun. 02, 2023	**Lecturer** – VNU-HUS MAT3500 3: Toán rời rạc

Feb. 6, 2023 - Jun. 02, 2023   **Lecturer** – VNU-HUS MAT3500 2: Toán rời rạc

Before 2023

Sep. 10, 2018 - Dec. 13, 2018   **Teaching Assistant** – VNU-HUS MAT3302: Toán rời rạc (bài tập)

Sep. 06, 2018 - Dec. 13, 2018   **Teaching Assistant** – VNU-HUS MAT3302 2TNT: Toán rời rạc (bài tập)

Oct. 11, 2017 - Nov. 30, 2017   **Teaching Assistant** – JAIST I216: Computational Complexity and Discrete Mathematics.

Apr. 12, 2017 - Jun. 02, 2017   **Teaching Assistant** – JAIST I216: Computational Complexity and Discrete Mathematics.

Oct. 12, 2016 - Dec. 01, 2016   **Teaching Assistant** – JAIST I216: Computational Complexity and Discrete Mathematics.

Apr. 08, 2015 - Jun. 05, 2015   **Teaching Assistant** – JAIST I216: Computational Complexity and Discrete Mathematics.

Co-authors (in alphabetical order)

David Avis, Niranka Banerjee, Erik D. Demaine, Martin L. Demaine, Christian Engels, Eli Fox-Epstein, Takehiro Ito, Amanj Khorramian, Hirotaka Ono, Yota Otachi, Akira Suzuki, Ryuhei Uehara, Tsuyoshi Yagita, Takeshi Yamada.

Publications

In all of my publications, I use the name **Duc A. Hoang**. A list of my publications can also be found at DBLP and Google Scholar. Some of them are available as e-prints at arXiv. All of my publications (including unpublished manuscripts and flawed ones) are listed at `https://hoanganhduc.github.io/publications/`.

Journal

[6] David Avis and **Duc A. Hoang**. "A Note on Acyclic Token Sliding Reconfiguration Graphs of Independent Sets". In: *Ars Combinatoria* 159 (2024), pp. 133–154. DOI: `10.61091/ars159-12`.

[5] **Duc A. Hoang**. "On the Complexity of Distance-d Independent Set Reconfiguration". In: *Theoretical Computer Science* 1009 (2024). (article 114682). DOI: `10.1016/j.tcs.2024.114682`.

[4] David Avis and **Duc A. Hoang**. "On Reconfiguration Graphs of Independent Sets under Token Sliding". In: *Graphs and Combinatorics* 39.3 (2023). (article 59). DOI: `10.1007/s00373-023-02644-w`.

[3] **Duc A. Hoang**. "TS-Reconfiguration of k-Path Vertex Covers in Caterpillars for $k \geq 4$". In: *Theory and Applications of Graphs* 10.1 (2023). (article 8). DOI: `10.20429/tag.2023.10108`.

[2] **Duc A. Hoang**, Akira Suzuki, and Tsuyoshi Yagita. "Reconfiguring k-Path Vertex Covers". In: *IEICE Transactions on Information and Systems* E105.D.7 (2022), pp. 1258–1272. DOI: `10.1587/transinf.2021EDP7177`.

[1] Erik D. Demaine, Martin L. Demaine, Eli Fox-Epstein, **Duc A. Hoang**, Takehiro Ito, Hirotaka Ono, Yota Otachi, Ryuhei Uehara, and Takeshi Yamada. "Linear-Time Algorithm for Sliding Tokens on Trees". In: *Theoretical Computer Science* 600 (2015), pp. 132–142. DOI: `10.1016/j.tcs.2015.07.037`.

Refereed International Conference

[6] Niranka Banerjee and **Duc A. Hoang**. "The Complexity of Distance-r Dominating Set Reconfiguration". In: *Proceedings of COCOON 2024, Part I*. Ed. by Yong Chen, Xiaofeng Gao, Xiaoming Sun, and An Zhang. Vol. 15161. LNCS. Springer, 2025, pp. 264–275. DOI: `10.1007/978-981-96-1090-7_22`.

[5] **Duc A. Hoang**. "On the Complexity of Distance-d Independent Set Reconfiguration". In: *Proceedings of WALCOM 2023*. Ed. by Bertrand M. T. Lin, Chun-Cheng Lin, and Giuseppe Liotta. Vol. 13973. LNCS. Springer, 2023, pp. 254–266. DOI: `10.1007/978-3-031-27051-2_22`.

[4] **Duc A. Hoang**, Akira Suzuki, and Tsuyoshi Yagita. "Reconfiguring k-Path Vertex Covers". In: *Proceedings of WALCOM 2020*. Ed. by M. Sohel Rahman, Kunihiko Sadakane, and Wing-Kin Sung. Vol. 12049. LNCS. Springer, 2020, pp. 133–145. DOI: `10.1007/978-3-030-39881-1_12`.

[3] **Duc A. Hoang**, Amanj Khorramian, and Ryuhei Uehara. "Shortest Reconfiguration Sequence for Sliding Tokens on Spiders". In: *Proceedings of CIAC 2019*. Ed. by Pinar Heggernes. Vol. 11485. LNCS. Springer, 2019, pp. 262–273. DOI: 10.1007/978-3-030-17402-6_22.

[2] Eli Fox-Epstein, **Duc A. Hoang**, Yota Otachi, and Ryuhei Uehara. "Sliding Token on Bipartite Permutation Graphs". In: *Proceedings of ISAAC 2015*. Ed. by Khaled Elbassioni and Kazuhisa Makino. Vol. 9472. LNCS. Springer, 2015, pp. 237–247. DOI: 10.1007/978-3-662-48971-0_21.

[1] Erik D. Demaine, Martin L. Demaine, Eli Fox-Epstein, **Duc A. Hoang**, Takehiro Ito, Hirotaka Ono, Yota Otachi, Ryuhei Uehara, and Takeshi Yamada. "Polynomial-Time Algorithm for Sliding Tokens on Trees". In: *Proceedings of ISAAC 2014*. Ed. by Hee-Kap Ahn and Chan-Su Shin. Vol. 8889. LNCS. Springer, 2014, pp. 389–400. DOI: 10.1007/978-3-319-13075-0_31.

Thesis/Dissertation

[2] **Duc A. Hoang**. "Independent set reconfiguration and related problems for some restricted graphs". PhD thesis. Japan Advanced Institute of Science and Technology, June 2018. URL: http://hdl.handle.net/10119/15431.

[1] **Duc A. Hoang**. "The independent set reconfiguration problem on some restricted graphs". MA thesis. Japan Advanced Institute of Science and Technology, Mar. 2015. URL: http://hdl.handle.net/10119/12643.