

Doan Dai Nguyen

in /dai-nguyen-doan/ | @enbugging | Blog

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EDUCATION

- **École Normale Supérieure - Paris Sciences & Lettres** Paris, France
Étudiant normalien, Computer Science Sep 2023 - Jun 2026 (Expected)
 - Competed at ICPC Southwestern European regional (SWERC) 2023 (17th/108), 2024 (34th/108)
- **École Polytechnique** Palaiseau, France
Bachelor of Science in Mathematics and Computer Science, minor in Biology. Sep 2020 - Jun 2023
 - Admitted with honour; graduated summa cum laude. CGPA: 4.23/4.00; Math GPA: 4.30/4.00

EXPERIENCE

- **Institute of Science and Technology** Klosterneuburg, Austria
Research assistant March 2025 - July 2024
 - Showed that shallow neural network can learn single-indexed model whilst retaining differential privacy.
- **Hamilton Institute, Maynooth University** Maynooth, Ireland
Research assistant June 2024 - Aug 2024
 - Introduced two Ising-like models for nucleic acid folding and showed computational complexity of related problems.
- **Laboratory of Informatics of École Polytechnique** Palaiseau, France
Research assistant, Bachelor Thesis Jan 2023 - Mar 2023
 - Derived new algorithms to determine if and how robust a thermodynamic model can predict an RNA secondary structure.
Showed for the first time that Relative Position problem is solvable in weak polynomial time. arXiv:2304.14962
- **Laboratory of Optics and Bioscience** Palaiseau, France
Research assistant Sep 2022 - Dec 2022
 - Set up and adapted AlphaFold-Multimer model to study proteins involved in archaea's DNA repairment.
- **Laboratory of Optics and Bioscience** Palaiseau, France
Research assistant Jun 2021 - Oct 2021
 - Created and implemented algorithms to optimize force constants that represent dihedral angles in chemical force field.

ACTIVITIES AND AWARDS

- **International Collegiate Programming Contest (ICPC)** Remote
Jury 2022 - Present
 - regional Northwestern Europe (NWERC) 2023-Present:
 - regional North Central North America 2025-Present:
 - regional Vietnam Northern Provincial 2023: Author of problem F - Bureaucracy, 1 of 2 problems unsolved in contest.
 - regional Western Asia 2021:
- **30th International Mathematics Competition for University Students** Aug 2023
Second prize.
- **Meta Hacker Cup (formerly Facebook Hacker Cup)** 2019, 2022
Advanced to round 2, and ranked 528th/1028 (2019), 1653rd/5047 (2022).
- **Google Hash Code** 2020, 2021
Ranked 1120th/9004 (2021), 2180th/10274 (2020).

SELECTED PROJECTS

- **Transcriber**
Team leader, Model architect Apr 2022 - May 2022
Gathered primary data set, built, and trained various machine learning models to predict the language (with consistent accuracy up to 96%) and generate text from transliterated text of 15 languages.
- **LogistiX**
Algorithm advisor, Lead software tester Oct 2021 - Jan 2022
Took charge of creating and maintaining tests for core library concerning approximate solutions to variants of Travelling Salesman Problem, such as Christofides algorithm. Advised on algorithm choices and implementation details for robustness and speed. Deployed and maintained CI/CD pipelines.

SKILLS

- **Languages:** English (C2), French (C1), Vietnamese (Native), German (A2), Italian (A1)
- **Programming languages:** C, C++, Python, JavaScript, Haskell, OCaml
- **Tools:** Git, LaTeX, HTML, Google Test, CMake, GitHub Actions, Keras, Tensorflow, MongoDB, NeDB, Node.js, Express.js