

# Pham Ngoc Gia Bao

Undergraduate Student in Mathematics.

University of Science, Vietnam National University, Ho Chi Minh City (HCMUS).

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## Education

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### B.Sc. in Mathematics

2025–present

University of Science, Vietnam National University, Ho Chi Minh City (HCMUS).

### Nguyen Dinh Chieu Gifted High School, Dong Thap

2022–2025

Mathematics-specialized track.

**Relevant coursework:** Linear Algebra, Analysis, Discrete Mathematics, Programming, Physics.

**Independent study:** Real Analysis, Measure Theory, Differential Geometry, and Mathematical Physics.

## Academic Interests

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Analysis and Geometry, especially Classical Analysis, Geometric Measure Theory, and Discrete Geometry.

## Awards and Distinctions

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- **Bronze Medal**, April 30 Traditional Olympic Competition in Mathematics, Vung Tau, 2024.
- **Second Prize**, VIASM Mathematics Training Camp, Da Lat, 2024.
- **Ranked 1st**, Dong Thap team selection for the National Mathematics Competition, 2024.

## Selected Mathematical Writing and Projects

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### Personal mathematical blog and expository writings

Blog

Maintained a personal academic blog for organizing mathematical notes, selected writings, and small academic projects, mainly in analysis and geometry.

### Expository report on Newtonian ODE models

Manuscript in preparation

Studied a 1D Newtonian model involving gravity, drag, and feedback control; analyzed damping regimes, stability, and energy estimates; implemented numerical simulations using Python.

### Forthcoming expository notes

In preparation

Topics include the polynomial method, billiard problems, and Lagrangian–Hamiltonian mechanics.

## Selected Software Projects

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### arXiv Reader

Source code

Built a local arXiv research tool using Python and Scrapy, with category-based queries, keyword ranking, and JSON snapshots.

### NDC Multimedia Club website

Source code | Demo

Built and deployed a website for the Multimedia Club at Nguyen Dinh Chieu Gifted High School using React.js, MUI, and Netlify.

## Technical Skills

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LaTeX, Python, C++, Git, Markdown/MDX.

## Languages

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Vietnamese: Native.

English: Academic working proficiency.

German: Currently learning.