

# YOONHAK NAM

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## Profile

Quantitative researcher with a background in nuclear astrophysics, especially neutron-star cooling. My academic research combined numerical calculations primarily in Fortran with data-driven optimization in Python. Currently Research Lead at SPEQTRA Investment Research Pte Ltd.

## Experience

**SPEQTRA Investment Research Pte Ltd · Research Lead** Jul. 2026 — Present

- Leading quantitative research and systematic investment analysis.

**SPEQTRA Investment Research Pte Ltd · Quantitative Research Intern** Jul. 2025 — Jun. 2026

- Conducted quantitative research and systematic strategy development.

**Matsuo Institute, Inc. · Quantitative Research Intern** Oct. 2024 — Jun. 2025

- Built Python tools for backtesting and evaluating CTA strategies.
- Implemented trading algorithms from academic and financial literature.
- Developed a research database from public data and web sources.

## Publications

**Y. Nam** and K. Sekizawa, “Data-driven exploration of the neutron  ${}^3\text{P}_2$  pairing gap using Cassiopeia A neutron star observational data: Direct  $\chi^2$  minimization.” *Physical Review C* 113, 045807 (2026).

**Y. Nam** and K. Sekizawa, “Vortex Creep Heating in Neutron Star Cooling: New Insights into Thermal Evolution of Heavy Neutron Stars.” *Proceedings of INPC2025* (2025); *arXiv:2510.24167*.

T. Lee, **Y. Nam**, and K. Sekizawa, “Impact of hyperon mixing on neutron star structure based on Skyrme-type equations of state.” *arXiv:2605.28727* (2026).

**Y. Nam** and K. Sekizawa, “Vortex creep heating in neutron star cooling with direct Urca processes in heavy neutron stars.” *arXiv:2511.13263* (2025).

## Award

**Award of Excellence · GCI 2023 Winter** Feb. 2024

- Top 38 of 2,424 participants in the University of Tokyo–hosted program.
- Completed machine-learning and data-driven business projects in Python.

## Education

**Institute of Science Tokyo**

M.S. in Physics · Nuclear Theory  
GPA 4.21 / 4.50

Oct. 2024 — Jun. 2026

Neutron-star cooling, nuclear superfluidity, and data-driven optimization.

Completed M.S. 3 months ahead of schedule

**Tokyo Institute of Technology**

B.S. in Physics · GPA 4.17 / 4.50

Apr. 2019 — Sep. 2024

Military service: Apr. 2020 — Mar. 2022

Japan–Korea Joint Scholarship Program for Science and Engineering Students.

Completed B.S. 6 months ahead of schedule · 7 semesters

## Languages

**Korean** · Native

**Japanese** · Native  
JLPT N1 180/180

**English** · Proficient  
TOEIC 960/990

**Chinese** · Beginner

## Technical Skills

- Python
- Fortran
- Scientific Computing
- Data Analysis

## Interests

- Quantitative Research  
Market Microstructure  
Physics-Inspired Modeling  
High-Performance Computing