# Nhut Nguyen, Ph.D.

Senior Developer | HFT C++ Engineer
High-Performance Trading Systems | Low-Latency C++

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## PROFILE

Strategy C++ engineer in high-frequency, latency-critical trading systems. Experienced in developing and optimizing real-time trading logic, execution paths, and performance-critical infrastructure operating at microsecond scale. Strong ownership mindset with deep systems knowledge and close collaboration with quants and traders.

## CORE EXPERTISE

- Low-Latency C++20/23, lock-free multithreaded systems
- High-frequency Trading Systems
- Strategy logic, execution, and real-time risk controls
- Performance optimization, determinism, and profiling
- Data structures, algorithms, cache-aware design
- Distributed real-time production systems

## WORK EXPERIENCE

DEC 2022 – PRESENT (3 YRS)

*Alipes ApS (Denmark)*
**Research Infrastructure Engineer**

- Developed and optimized latency-critical C++ components supporting live trading and prediction systems running in microsecond time budgets.
- Implemented, validated, and optimized financial algorithms used directly in production decision-making.
- Worked closely with quants and researchers to translate models into efficient, production-ready C++ strategy components.
- Improved throughput and determinism through cache-aware data structures, multithreading, and low-level optimizations.
- Maintained and evolved internal libraries used across research, simulation, and live trading workflows.
- Participated in production ownership, debugging live issues and improving system robustness under load.
- Used CUDA selectively for performance-critical workloads where latency/throughput trade-offs justified acceleration..

DEC 2021 – NOV 2022 (1 YR)

*CLAAS E-Systems Denmark*
**C++ Software Developer**

- Modernized performance-critical C++ software for embedded real-time systems.
- Improved system reliability and determinism on constrained hardware.
- Worked close to hardware and OS boundaries, strengthening real-time and systems programming skills.

AUG 2018 – SEP 2021 (3 YRS 1 MO)

*Synopsys Denmark ApS*
**Senior R&D Engineer**

- Optimized complex timing optimization engines, achieving 2x performance improvements.
- Strengthened robustness of core algorithms to 95% reliability in production workloads.
- Deepened expertise in algorithmic optimization, profiling, and large-scale C++ codebases.

FEB 2016 – JULY 2018 (2 YRS 6 MOS)

*Teklatech A/S (Denmark)*
**Software Development Engineer**

- Built and optimized computational models for power delivery networks with complex interconnections.
- Focused on correctness, performance, and scalability in numerically intensive systems.

## TECHNICAL SKILLS

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|---|---|
| LANGUAGES | C++20/23, Python |
| SYSTEMS & TOOLS | Git, GitHub, GitLab<br>CI/CD, Jenkins, TeamCity<br>Linux, Docker, CMake<br>VS Code, Rider<br>Profiling & debugging tools |
| PRACTICES | Performance-driven development<br>System design discussions<br>Production ownership & on-call mindset<br>Code reviews, documentation, |

## EDUCATION

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|---|---|
| 2012 – 2015 | **Ph.D. in Math & Computer Science**<br>*Technical University of Denmark* |
| 2005 – 2009 | **M.Sc. in Algebra & Number Theory**<br>*Vietnam National University HCM* |
| 2000 – 2004 | **B.Sc. in Math & Computer Science**<br>*Vietnam National University HCM* |

## LANGUAGES

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|---|---|
| ENGLISH | Fluent |
| DANISH | Limited working proficiency |
| VIETNAMESE | Native |