Dear Dr. Hartwig Antz and Dr. Pratik Nayak,

I am writing to express my interest in your group’s recent opening for a PhD student in High-Performance Computing. HPC is the area I want to dedicate my research career to. I obtained my Master’s degree under the supervision of Dr. Farshad Khunjush at Shiraz University, one of the leading universities in Iran.

During my studies, I worked as a research assistant in the Parallel and High-Performance Computing Lab, where I was involved in projects on HPC, federated learning, and service placement in fog–cloud environments. For my thesis, I developed a profiling-guided scheduler with memory-safety mechanisms for multi-GPU workloads in containerized environments. The approach reduced runtime by about 18% compared to baseline methods. These experiences shaped me into an independent and results-driven researcher.

Alongside my academic work, I have built professional experience as a DevOps engineer, and currently serve as a Senior DevOps and Infrastructure Engineer at a global telecom fraud detection company. This role required me to design reproducible CI/CD pipelines, maintain large-scale infrastructures, and collaborate across teams on latency-sensitive platforms. These experiences strengthened my ability to build reliable systems and to work effectively in collaborative software development.

I gained hands-on experience with C++ both in coursework and in practice. I worked with CUDA(C++) kernel development for applications such as CNN layers and dynamic graph traversal, and I was also a teaching assistant for a C programming course. I completed courses in numerical methods and parallel programming that introduced me to Krylov solvers and MPI. While I have not yet implemented distributed preconditioners, I am confident in my ability to learn and contribute in this area.

What attracts me to this position at TUM is the opportunity to combine performance engineering with applications in scientific computing. I am motivated by the challenge of analyzing performance at scale, building efficient algorithms, and developing solutions that can be trusted and reproduced.

Thank you for considering my application. I would welcome the opportunity to discuss how my background and interests align with your group’s research directions.

Sincerely,

Ali Yazdanpanah

Dear Selection Committee,

I am writing to express my interest in the PhD positions in Software & Systems Security at Ghent University. Software reliability and security are where I want to focus my research career. I earned an M.Sc. in Computer Systems Architecture at Shiraz University under Dr. Farshad Khunjush.

During my studies I worked as a research assistant in the Parallel and High-Performance Computing Lab on projects in heterogeneous systems and cloud/fog platforms. For my thesis, I built a profiling-guided, memory-safety-aware scheduler for multi-GPU batch workloads (CUDA) in containerized environments, reducing end-to-end runtime by ~18% versus baseline scheduling. This work made me disciplined about measurement, debugging, and reproducibility.

Alongside academia, I have industry experience as a DevOps/Infrastructure engineer. I design reproducible CI/CD pipelines, maintain large Linux codebases, and collaborate across teams on latency-sensitive systems. These habits—tests, artifacts, and clear baselines—carry over directly to security research and tool adoption.

Technically, I work close to the system: C/C++, pointers and concurrency, build systems (CMake/Make), and Linux tooling (gdb, perf, call-graph/trace capture). I have used basic static checks and sanitizers (e.g., clang-tidy, AddressSanitizer/UBSan) and I am eager to go deeper with LLVM-based analysis and modern fuzzers (AFL++/libFuzzer) to find high-impact defects at scale. I am also interested in automated repair and developer-friendly reporting to reduce false positives.

Regarding Rust: I have not used Rust professionally yet. I am actively bridging this gap by working through Rust’s ownership/borrowing model and building small systems utilities with Clippy and cargo-fuzz; my goal is to reach working proficiency early in the program so I can contribute to Rust-based analysis and secure systems code.

What attracts me to Ghent is the combination of rigorous program analysis with work on real codebases—scalable static analysis, dynamic checking, and tooling that developers actually adopt. I bring systems fundamentals, practical C/C++ experience, strong debugging/profiling skills, and a reproducibility mindset. I would welcome the chance to discuss fit and how I can contribute to your group’s research.

Thank you for considering my application.

Sincerely,

Ali Yazdanpanah

Dear Admissions Committee,

I’m applying to the Max Planck Graduate Center for Computer and Information Science because I want to do rigorous, high-impact research at the interface of systems, security, and performance—and the MPGC model (co-advising across institutes, deep mentoring, and an interdisciplinary cohort) is exactly the environment I’ve been looking for.

I hold a B.Sc. in Hardware Engineering and an M.Sc. in Computer Systems Architecture (Shiraz University). For my master’s thesis, I built a profiling-guided CUDA scheduler with memory-safety safeguards for multi-GPU batch workloads, achieving ~18% end-to-end speedup on benchmarks. As a Research Assistant in the Parallel & Cloud Computing Lab, I co-authored a Cluster Computing paper on multi-objective service placement in heterogeneous fog–cloud systems. These experiences trained me to set clean baselines, measure where the limits really are (memory traffic, launch/synchronization, occupancy), and validate gains with reproducible experiments.

Professionally, I work as a Senior DevOps/Infrastructure Engineer on latency-sensitive, large-scale platforms. I design CI/CD pipelines, containerized environments, and observability stacks so results are auditable and repeatable. This mindset—tests, artifacts, and traceable configurations—shapes how I approach research, too. I like tools and code that other researchers can pick up and trust.

My research interests fit well with multiple MPIs and partner groups:

Software & Systems Security / Program Analysis: scalable static analysis for C/C++, dynamic checking (sanitizers, fuzzing), and tooling that reduces false positives and leads to real fixes. I’m comfortable with C/C++, Linux internals, gdb/perf, and have used basic static checks; I’m keen to go deeper with LLVM-based analysis and modern fuzzers.

Systems & Performance (HPC/ML systems): performance engineering for GPU-accelerated workloads (CUDA), memory-aware scheduling, and reliability-aware runtimes. I’m interested in co-design across algorithm, runtime, and hardware, including efficient inference for large models under tight memory/energy budgets.

Dependable Computing: fault modeling and lightweight mitigation in accelerators and distributed systems; turning reliability from “overhead” into an ally through structured redundancy and profiling-guided adaptation.

I work independently and I collaborate well. I’ve mentored junior students, partnered across teams in industry, and taught CUDA/C/Python as a TA. I enjoy debugging as much as design, and I document my assumptions so others can reproduce the path to a result. I would be excited to join a co-advised project—e.g., combining program analysis with high-performance systems, or bringing secure tooling to codebases that power scientific computing and AI.

I’m drawn to Max Planck because it values curiosity-driven research with high standards for rigor and clarity—and because it provides the breadth to explore and the depth to contribute meaningfully. I would be grateful for the opportunity to continue my training within a community that prizes both principled methods and practical impact.

Thank you for your time and consideration.

Sincerely,

Ali Yazdanpanah

Dear Dr. Marco Chiesa and Dr. Hamed Nemati,

I’m applying for the Doctoral Student position in Machine Learning for Automated Code Generation at KTH. I want to dedicate my PhD to building LLMs for code that are trustworthy, efficient, and usable—models that compile, pass tests, and improve through feedback.

I have demonstrated independent work during my M.Sc. at Shiraz University. My thesis produced a profiling-guided CUDA workload scheduler that reduced runtime by ~18% comparing to the baseline methods. I scoped the problem, built the tooling, ran ablations, and wrote up reproducible results. The system also included an AI-based workload classifier, which gave me practical experience connecting machine learning to real scheduling decisions.

Collaboration runs through my academic and industry work. As a research assistant, I co-authored a Cluster Computing paper on smart fog–cloud service placement and mentored junior students. In industry, as a Senior DevOps/Infrastructure Engineer, I worked across data, platform, and product teams to keep latency-sensitive, large-scale systems stable. This role also exposed me to NLP pipelines in production—from data prep and evaluation to deployment and monitoring—which shaped how I think about end-to-end ML systems.

I bring a professional, reproducible approach. I treat results as auditable artifacts: clean baselines, containerized environments, CI-backed experiments, saved traces, and simple tests to prevent regressions. I value clear documentation, steady iteration, and calm debugging.

I enjoy analyzing complex issues at the system level. My background spans HPC, heterogeneous and distributed systems, and computer architecture, combined with coursework and independent study in NLP/ML and, recently, LLMs. That mix helps me diagnose real causes—compute vs. memory, scheduling vs. algorithm—and design fixes grounded in measurement. It also fits the code-generation setting, where compilers, tests, and runtimes are part of the learning loop.

What excites me about this PhD is the chance to unite LLM research with the full software lifecycle: curating reliable datasets, designing generate-and-validate loops (compiler/tests as oracles), tracking first-try correctness and regressions, and building pipelines that others can repeat and extend. My passion for LLMs and my systems mindset make this position a natural next step.

Thank you for considering my application. I’d welcome the chance to discuss how my background in HPC, system reliability, and practical ML can support KTH’s goals in automated code generation.

Sincerely,

Ali Yazdanpanah

Dear Members of the Selection Committee,

I am writing to apply for the PhD position “Low-Rate Error-Correcting Codes for Security Applications” at Eindhoven University of Technology. My background in computer systems architecture and hardware engineering, combined with hands-on work in embedded and fault-tolerant systems, aligns closely with the goals of this project.

During my M.Sc. at Shiraz University, I designed a profiling-guided CUDA scheduler that reduced runtime by about 18% on benchmark workloads. I scope d, implemented, and validated the system independently, gaining experience in performance optimization, error behavior, and reliable system design—skills that connect naturally to coding theory and secure computation.

Through coursework in Advanced Embedded Systems, I worked on both the hardware and software sides of system design—developing embedded controllers, working with low-level firmware, and optimizing communication between software components and hardware peripherals. Courses such as Digital Communications and Numerical Methods gave me a foundation in information theory, data integrity, and algorithmic optimization. My B.Sc. thesis on FPGA-based neuron models and work on fault-tolerant circuits using redundancy and fault injection strengthened my understanding of reliable hardware implementation and verification.

While I have limited formal experience in cryptography and hardware security, I am very comfortable with the underlying mathematical and system concepts, and I am motivated to expand my expertise in these areas. I believe this PhD offers the perfect environment to bridge that gap—combining my strong embedded systems background with the opportunity to develop secure, efficient coding mechanisms for modern hardware platforms.

I am currently working as a Senior DevOps and Infrastructure Engineer, where I design reproducible, secure software environments and collaborate across teams to ensure system integrity at scale. This experience complements my research background, reinforcing a disciplined, professional, and collaborative approach to engineering and experimentation.

I am eager to contribute to TU/e’s efforts in advancing coding techniques for security-critical applications. Thank you for considering my application. I would welcome the opportunity to discuss how my background and motivation align with your research goals.

Sincerely,

Ali Yazdanpanah

Dear Prof. Marco Chiesa and Dr. Hamed Nemati,

I am writing to express my strong interest in the Doctoral position in Machine Learning for Automated Code Generation at KTH Royal Institute of Technology. With a background in computer systems architecture, performance optimization, and software infrastructure, I have developed a deep curiosity about how intelligent systems can learn to reason about code — generating, optimizing, and verifying it autonomously. This project’s intersection of AI, software verification, and automation resonates deeply with my academic foundations and my professional experience across the full software lifecycle.

I hold an M.Sc. in Computer Systems Architecture and a B.Sc. in Hardware Engineering from Shiraz University. My master’s thesis, “Profiling-guided Scheduler with Memory-Safety Mechanisms for Multi-GPU Workloads,” explored how automated reasoning and profiling could improve both performance and correctness. By developing a container-based scheduling framework that reduced runtime by ~18%, I learned to analyze complex system behavior and ensure reproducibility — two values essential to dependable, data-driven software generation. My bachelor’s thesis on the FPGA implementation of leaky integrate-and-fire neurons further reinforced my appreciation for how abstract algorithms are transformed into verifiable, real-world implementations.

Alongside my academic experience, I have worked professionally as a Senior DevOps and Infrastructure Engineer, designing reproducible CI/CD pipelines, managing large codebases, and deploying high-availability services. This role gave me an end-to-end understanding of the software lifecycle, from development and testing to monitoring and fault analysis. It also taught me to work collaboratively within multidisciplinary teams, to uphold professional rigor in complex environments, and to automate processes that enhance reliability and efficiency. These experiences strongly shaped my ability to work independently, analyze intricate technical systems, and collaborate effectively — qualities I believe are critical for success as a doctoral researcher.

While I am relatively new to large language models and machine learning for code, I am deeply fascinated by their potential to revolutionize software engineering. I am eager to build upon my solid background in systems and automation to explore how learning-based models can reason about syntax, semantics, and correctness. The WASP program’s vision of uniting artificial intelligence and software verification aligns perfectly with my aspiration to bridge the gap between low-level system understanding and high-level intelligent reasoning.

My goal in pursuing a PhD is to gain experience at the forefront of machine learning and automated software reasoning, to become an independent researcher, and to lay the foundations for a long-term career in advancing trustworthy and intelligent software systems.

I am particularly inspired by the prospect of contributing to your group’s research on AI-assisted programming tools that improve the efficiency, security, and resilience of software systems. I am confident that my combination of architectural insight, software reliability expertise, and commitment to reproducible, collaborative research would allow me to contribute meaningfully to this project and to KTH’s vibrant research community.

Thank you for considering my application. I would be delighted to discuss how my background in system optimization, automation, and performance reasoning can contribute to advancing intelligent, verifiable code generation.

Sincerely,

Ali Yazdanpanah

Dear Professor Stefano Markidis,

I am writing to express my strong interest in the Doctoral Student in High-Performance Computing position at KTH Royal Institute of Technology. With a background in computer systems architecture, GPU optimization, and reproducible experimentation, I am eager to contribute to your research on large-scale numerical simulation and performance engineering for heterogeneous systems. This PhD aligns closely with my academic training, research experience, and long-term goal of becoming an independent researcher advancing efficiency and reliability in high-performance computing.

I hold an M.Sc. in Computer Systems Architecture and a B.Sc. in Hardware Engineering from Shiraz University. In my master’s thesis, I developed a profiling-guided, multi-GPU performance scheduler for containerized workloads that achieved an ~18% runtime reduction through kernel classification and concurrency-aware placement. This work deepened my understanding of performance bottlenecks, scheduling trade-offs, and workload characterization in GPU clusters—challenges central to modern HPC research. My bachelor’s thesis on FPGA implementation of leaky integrate-and-fire neurons provided early exposure to low-level hardware design and timing analysis, reinforcing my system-level perspective.

As a research assistant at the Parallel and Cloud Computing Lab, I focused on benchmarking heterogeneous systems and building reproducible experiment pipelines for performance analysis. I gained experience in CUDA, MPI, and OpenMP programming models, as well as tools such as Nsight Systems, CUPTI, and nvprof for profiling and instrumentation. Through mentoring junior researchers and collaborating on multi-author publications—including a paper in Cluster Computing (Springer)—I learned the value of scientific rigor, teamwork, and structured experimentation.

In parallel with my academic work, my professional experience as a Senior DevOps and Infrastructure Engineer has given me comprehensive insight into the software lifecycle—from development and optimization to testing, deployment, and monitoring. I have built reproducible CI/CD pipelines, automated resource orchestration on multi-tenant environments, and improved observability for GPU-based workloads. These experiences have strengthened my ability to work independently, analyze complex performance issues, and collaborate effectively with engineers and researchers alike—qualities I consider essential for a successful PhD student at KTH.

I am particularly drawn to your group’s research on heterogeneous computing, large-scale simulation, and mixed-precision algorithms, and I am inspired by the opportunity to contribute to the development of new performance models and scalable software frameworks. My goal in pursuing a PhD is to gain experience at the forefront of scientific computing and system optimization, to become an independent researcher, and to lay the foundation for a long-term career in advancing high-performance and energy-efficient computing systems.

I am confident that my background in GPU acceleration, workload optimization, and reproducible software engineering aligns closely with the goals of this project. I would be honored to discuss how my research experience and technical expertise can contribute to your work in high-performance computing and simulation at KTH.

Thank you for considering my application.

Sincerely,

Ali Yazdanpanah

Dear Professor Stefano Markidis,

I am writing to express my strong interest in the Doctoral Student in High-Performance Computing position at KTH Royal Institute of Technology. With a background in computer systems architecture, GPU optimization, and reproducible experimentation, I am eager to contribute to your research on large-scale numerical simulation and performance engineering for heterogeneous systems. This PhD aligns closely with my academic training, research experience, and long-term goal of becoming an independent researcher advancing efficiency and reliability in high-performance computing.

I hold an M.Sc. in Computer Systems Architecture and a B.Sc. in Hardware Engineering from Shiraz University. In my master’s thesis, I developed a workload-aware multi-GPU performance scheduler for containerized workloads that achieved an ~18% runtime reduction through kernel classification and concurrency-aware placement. This work deepened my understanding of performance bottlenecks, scheduling trade-offs, and workload characterization in GPU clusters, challenges central to modern HPC research. My bachelor’s thesis on FPGA implementation of leaky integrate-and-fire neurons provided early exposure to low-level hardware design and timing analysis, reinforcing my system-level perspective.

As a research assistant at the Parallel and Cloud Computing Lab, I focused on benchmarking heterogeneous systems and building reproducible experiment pipelines for performance analysis. I gained experience in parallel programming models such as CUDA, MPI, and OpenMP, and became familiar with a range of performance analysis and debugging tools for heterogeneous systems, including GPU and CPU profilers, tracing frameworks, and workflow automation utilities. Through collaborating on multi-author publications, including a paper in Cluster Computing (Springer), I learned the value of scientific rigor, teamwork, and structured experimentation.

In parallel with my academic work, my professional experience as a Senior DevOps and Infrastructure Engineer has given me comprehensive insight into the software lifecycle, from development and optimization to testing, deployment, and monitoring. I have built reproducible CI/CD pipelines, automated resource orchestration on multi-tenant environments, and improved observability for GPU-based workloads. These experiences have strengthened my ability to work independently, analyze complex performance issues, and collaborate effectively with engineers and researchers alike—qualities I consider essential for a successful PhD student.

I am deeply fascinated by the intersection of high-performance computing, artificial intelligence, and quantum computing. The idea of integrating AI-driven methods into computational workflows to optimize and accelerate large-scale simulations resonates strongly with my interests. I see this PhD as a unique opportunity to explore how learning-based models can guide performance decisions in heterogeneous systems and how emerging quantum-classical paradigms can extend computational boundaries. Working in your group would allow me to contribute to research that lies precisely at this frontier, where AI meets HPC and quantum systems, to build the next generation of intelligent and efficient computational frameworks.

My goal in pursuing a PhD is to gain experience at the forefront of scientific computing and system optimization, to become an independent researcher, and to lay the foundation for a long-term career advancing high-performance and energy-efficient computing systems. I am confident that my background in GPU acceleration, workload optimization, and reproducible software engineering aligns closely with the goals of this project, particularly in exploring intelligent, machine-learning-driven approaches to high-performance computing.

Thank you very much for considering my application.

Sincerely,

Ali Yazdanpanah

Dear Professor Stefano Markidis,

I am writing to express my strong interest in the Doctoral Student in High-Performance Computing position at KTH Royal Institute of Technology. With a background in computer systems architecture, GPU optimization, and reproducible experimentation, I am eager to contribute to your research on large-scale numerical simulation and performance engineering for heterogeneous systems. This PhD aligns closely with my academic training, research experience, and long-term goal of becoming an independent researcher advancing efficiency and reliability in high-performance computing.

I hold an M.Sc. in Computer Systems Architecture and a B.Sc. in Hardware Engineering from Shiraz University. In my master’s thesis, I developed a workload-aware multi-GPU performance scheduler for containerized workloads that achieved an ~18% runtime reduction through kernel classification and concurrency-aware placement. This work deepened my understanding of performance bottlenecks, scheduling trade-offs, and workload characterization in GPU clusters, challenges central to modern HPC research. My bachelor’s thesis on FPGA implementation of leaky integrate-and-fire neurons provided early exposure to low-level hardware design and timing analysis, reinforcing my system-level perspective.

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In parallel with my academic work, my professional experience as a Senior DevOps and Infrastructure Engineer has given me comprehensive insight into the software lifecycle, from development and optimization to testing, deployment, and monitoring. I have built reproducible CI/CD pipelines, automated resource orchestration on multi-tenant environments, and improved observability for GPU-based workloads. These experiences have strengthened my ability to work independently, analyze complex performance issues, and collaborate effectively with engineers and researchers alike—qualities I consider essential for a successful PhD student.

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My goal in pursuing a PhD is to gain experience at the forefront of scientific computing and system optimization, to become an independent researcher, and to lay the foundation for a long-term career advancing high-performance and energy-efficient computing systems. I am confident that my background in GPU acceleration, workload optimization, and reproducible software engineering aligns closely with the goals of this project, particularly in exploring intelligent, machine-learning-driven approaches to high-performance computing.

Thank you very much for considering my application.

Sincerely,

Ali Yazdanpanah

Dear Prof. Marco Chiesa and Dr. Hamed Nemati,

I am writing to express my strong interest in the Doctoral position in Machine Learning for Automated Code Generation at KTH Royal Institute of Technology. With a background in computer systems architecture, performance optimization, and software infrastructure, I have developed a deep curiosity about how intelligent systems can learn to reason about code generating, optimizing, and verifying it autonomously. This project’s intersection of artificial intelligence, software verification, and automation aligns closely with my academic foundations and my professional experience across the full software lifecycle.

I hold an M.Sc. in Computer Systems Architecture and a B.Sc. in Hardware Engineering from Shiraz University. My master’s thesis, Profiling-guided Scheduler with Memory-Safety Mechanisms for Multi-GPU Workloads, explored how automated reasoning and profiling can improve both performance and correctness. By developing a container-based scheduling framework that reduced runtime by approximately 18%, I learned to analyze complex system behavior and ensure reproducibility, two values essential to dependable, data-driven software generation. My bachelor’s thesis on the FPGA implementation of leaky integrate-and-fire neurons further strengthened my understanding of how abstract algorithms can be transformed into verifiable, real-world implementations.

Alongside my academic experience, I have worked professionally as a Senior DevOps and Infrastructure Engineer, designing reproducible CI/CD pipelines, managing large codebases, and deploying high-availability services. This role gave me an end-to-end understanding of the software lifecycle, from development and testing to monitoring and fault analysis. It also taught me to collaborate within multidisciplinary teams, to uphold professional rigor in complex environments, and to automate processes that enhance reliability and efficiency. Through these experiences, I developed a deep appreciation for automation and reproducibility, principles that I now wish to extend to intelligent, learning-based software reasoning.

Although I am relatively new to large language models and machine learning for code, I am deeply fascinated by their potential to revolutionize software engineering. I am eager to build upon my systems and automation background to explore how learning-based models can reason about syntax, semantics, and correctness. The WASP program’s vision of uniting artificial intelligence and software verification aligns perfectly with my aspiration to bridge the gap between low-level system understanding and high-level intelligent reasoning.

My goal in pursuing a PhD is to gain experience at the forefront of machine learning and automated software reasoning, to become an independent researcher, and to lay the foundation for a long-term career in advancing trustworthy and intelligent software systems. I am particularly inspired by the prospect of contributing to your group’s research on AI-assisted programming tools that improve the efficiency, security, and resilience of software. I am confident that my combination of architectural insight, reliability-focused engineering experience, and commitment to reproducible, collaborative research would allow me to contribute meaningfully to this project and to KTH’s research community.

Thank you for considering my application. I would be delighted to discuss how my background in system optimization, automation, and performance reasoning can contribute to building trustworthy and intelligent software generation systems.

Sincerely,

Ali Yazdanpanah

Dear Professor Stefano Markidis,

I am writing to express my strong interest in the Doctoral Student position in High-Performance Computing at KTH Royal Institute of Technology. With a background in computer systems architecture, GPU optimization, and reproducible experimentation, I am eager to contribute to your group’s research on large-scale numerical simulation and performance engineering for heterogeneous systems. This PhD aligns closely with my academic training, hands-on research experience, and long-term goal of becoming an independent researcher advancing efficiency and reliability in high-performance computing.

During my M.Sc. in Computer Systems Architecture at Shiraz University, I developed a profiling-guided multi-GPU scheduler for containerized workloads that achieved an ≈18% runtime reduction through kernel classification and concurrency-aware placement. This work taught me to start from clean baselines, identify true limiters such as memory traffic and synchronization, and validate every improvement through repeatable profiling runs. My B.Sc. thesis on FPGA implementation of leaky integrate-and-fire neurons strengthened my understanding of hardware-software interaction and low-level performance behavior.

As a research assistant at the Parallel and Cloud Computing Lab, I focused on benchmarking heterogeneous systems and building reproducible experiment pipelines for performance analysis. I gained experience with parallel programming models including CUDA, MPI, and OpenMP, as well as profiling and debugging frameworks for GPUs and CPUs. Collaborating on multi-author publications, including a paper in Cluster Computing (Springer), helped me appreciate the value of scientific rigor, clear documentation, and teamwork in data-driven research.

Alongside my academic work, I have professional experience as a Senior DevOps and Infrastructure Engineer, where I automated GPU-based workflows, optimized resource orchestration, and built CI/CD pipelines ensuring traceability and reproducibility. These experiences reinforced my ability to design dependable computational environments, analyze complex performance behavior, and collaborate across technical domains — skills I consider essential for research in high-performance and scalable computing.

I have read several of your group’s papers, including “What is Quantum Parallelism Anyhow?” and your recent works on heterogeneous computing and performance modeling. I was particularly inspired by how these studies bridge classical computational thinking with emerging paradigms in quantum and AI-assisted simulation. This approach resonates deeply with my curiosity about how data-driven models and quantum-classical reasoning can enhance performance in large-scale computing.

I am deeply fascinated by the intersection of high-performance computing, artificial intelligence, and quantum computing. The idea of integrating AI-driven methods into computational workflows to optimize and accelerate large-scale simulations matches my interests closely. I see this PhD as an opportunity to explore how data-driven models can guide performance decisions in heterogeneous systems and how emerging quantum-classical paradigms can extend computational capabilities.

My goal in pursuing a PhD is to gain experience at the forefront of scientific computing and performance engineering, to become an independent researcher, and to lay the foundation for a career advancing high-performance and energy-efficient computing systems. I am confident that my background in GPU acceleration, workload optimization, and reproducible software engineering aligns closely with the objectives of your group.

I have attached my CV for further details about my education and research experience. A more detailed overview of my projects and skills can be found on my personal website: [ali-yazdanpanah.github.io](https://ali-yazdanpanah.github.io/)

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Thank you for considering my application. I would be honored to discuss how my research experience and technical expertise could contribute to KTH’s work in high-performance computing and simulation.

Sincerely,

Ali Yazdanpanah