

Kijin An

Ph.D Candidate

Computer Science at Virginia Tech

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Dear Hiring Manager:

I am writing to apply for the full-time position posted on the website.

Currently, I am a Ph.D. student in the Department of Computer Science at Virginia Tech, advised by Prof. Eli Tilevich. I plan to complete my degree in May 2021. I am specialized in distributed Systems and Software Engineering techniques.

My research is to facilitate the evolutionary modifications of distributed apps via automatic and architectural refactoring tools. Thus, programmers can more easily perform various perfective and adaptive modifications such as localizing bugs in distributed apps, optimizing distribution granularity, and correctly replicating cloud services for edge-based computing. My approach improves software engineering's latest ideas such as declarative program analysis, fuzzing/checkpointing execution, and program transformation. My research work was published in *WebConf 2020*, one of the top-tier CS conferences. And other projects in Virginia Tech were nominated for the best paper awards twice.

During consecutive GTAs in Virginia Tech, I was the main developer to build a core course project for the CS department called ' Understanding Heap spraying Attack'. To that end, I developed a victim server (C++ addons) by extending JavaScript Virtual machine V8. Because this project had the purpose of CyberSecurity education, I could study this work employing pre-/post-surveys from 540 VT undergrad students owning IRB approvals. Their responses were valuable to improve the teaching frameworks including grader and submission site.

For GRAs in Virginia Tech, I participated in the project for developing compiler tools to automate distributing embedded applications (e.g. drone firmware PX4-Autopilot) to support the safety of applications by using the optee-os/SGX Environments. As the second author of GPCE and COLA papers, I contributed to analyzing code and build systems for both the PX4-Autopilot firmware and optee-os.

I also have some background in Distributed systems and Networking throughout six years of industrial experience in two companies in South Korea. First, I worked in Robotics Research at KIST to lead a project for building a large scale distributed system, including machine learning modules. In SK Telesys, I was a System Engineer for developing interdisciplinary Network system productions.

I am confident I can make an immediate contribution based on my prior experience. I look forward to learning more about this opportunity.

Sincerely,
Kijin An

I'm studying automatic, architectural refactoring tools to ensure the applications' performance, efficiency, and safety by means of the latest ideas in program analysis, synthesis, and transformation, while also integrating the latest technologies in handling replicated state. For three semesters, I developed a core course project for VT CS2506. This is a distributed system for operating a victim server based on V8. For three semesters, I participated in a research project for developing tools to automate distributing embedded applications (e.g. drone firmware PX4) to support optee-os/SGX Environments.

I was a researcher for developing a distributed system for a robot. I mainly developed sensor fusion algorithms and web-based systems. I also led this project and demos for three years. And I published ten research papers.

I was a system Engineer for developing 3-4G communications equipment.

Will you now or in the future require IBM to file an application for employment-based visa sponsorship? If you have non-immigrant status, for example, such as H-1 or F-1 employment authorization of CPT, OPT, or STEM OPT extension, your answer to this question must be "yes"

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No

Yes

11am-4pm

2pm-7pm

11am-2pm

