Arash **Vaezi**

"Be the change that you want to see in the world."

About Me

My fascination with electronic devices and an enduring curiosity about their inner workings began during my formative years. Over time, this interest evolved into a profound desire to comprehend how machines resolve complex challenges. In 2005, I secured admission to the Computer Engineering Department at Shahid Bahonar University of Kerman, one of Iran's prestigious institutions, situated in my hometown.

During my second year of studies, I embarked on practical training, providing me with the opportunity to design real-life programs and algorithms using computers. This experience led to the inception of numerous projects, culminating in my Bachelor's thesis, aptly titled "Designing a Computation Interpreter". In my final undergraduate year (2009), I delved even deeper into the world of algorithms, recognizing them as ingenious solutions to "how to d" questions, which ignited a plethora of innovative ideas for practical applications.

Subsequently, I pursued a Master's program in Designing Algorithms at Sharif University of Technology (SUT), renowned as Iran's most competitive engineering institution. I successfully completed a wide array of courses, encompassing Randomized Algorithms, Game Theory, Parallel Processing, Computational Geometry, Distributed Algorithms, and Advanced Algorithms.

Following my Master's journey, I overcame a significant challenge by securing a place in Sharif University's Ph.D. program. Despite a temporary setback due to unforeseen family circumstances that compelled me to temporarily depart from New York University, where I had initially enrolled, I persevered. I retook the Ph.D. entrance exam, achieving the third rank among thousands of applicants. Eventually, I completed my Ph.D. with distinction, earning the distinction of being the university's top Ph.D. student.

My true passion lies in the meticulous design of systems. I have successfully crafted software systems characterized by intricate subsystems, each meticulously managing specific components. My interdisciplinary background in computer science and engineering has endowed me with a geometric perspective, enabling me to construct organized systems adept at handling diverse facets and states. My extensive experience encompasses the design of large-scale software systems, some of which are comprehensively detailed in my CV.

I have methodically classified over a hundred different types of attacks that can potentially occur in distributed systems. In a recent undertaking, I conceived a system named LoR, which boasts invulnerability to all identified attack types. This system's unparalleled security can be attributed to its innovative geometric structure. For a comprehensive understanding of this groundbreaking work, please see the paper available at `https://doi.org/10.48550/arXiv.2206.01121`, an updated version of which is submitted to SIGMETRICS, a prestigious A* conference. Furthermore, the real-world implementation of LoR has provided the foundation for the establishment of a new company. This enterprise specializes in the creation of algorithms for establishing and enhancing brand identities, a concept we have coined as "algorithmic branding".

In another noteworthy instance, during my tenure at a leading telecommunications firm, I was entrusted with the development of a monitoring and management system. I introduced a DNA-inspired structure for software agents, enabling extensive deployment throughout the network. This DNA structure brought about a substantial enhancement in network management and monitoring efficiency. Its remarkable feature lies in its ability to introduce new functionalities to the entire network through the simple addition of a "codon" (gene) to the DNA structure. For a detailed insight into this system, please peruse the paper at `https://doi.org/10.48550/arXiv.2211.17104`, which is submitted to AAMAS, another esteemed A* conference in our field.

In addition to my research and development work, I possess a profound passion for teaching and have had the privilege of instructing numerous undergraduate and graduate courses.

With my demonstrated adaptability and profound expertise in systems design, I am confident in my capacity to excel in the challenges and opportunities that lie ahead.

Sincerely,

Arash Vaezi

avaezi@sharif.edu