Sina **Kamali**

(+1) 548-384-7706 | sinakamali@uwaterloo.ca | cs.uwaterloo.ca/ s4kamali | kamali-sina | cnakamali | Sina Kamali

Education

Cheriton School of Computer Science, University of Waterloo — *Waterloo, ON*

Master of Math in Computer Science — *Sep. 2023 - present*

- *GPA*: 95/100 (4.0/4 in the U.S. GPA system)

College of Electric and Computer Engineering, University of Tehran — *Tehran, Iran*

B.Sc. in Computer Engineering (Software Engineering major) — *Sep. 2018 - Jan. 2023*

- *GPA*: 18.31/20 (3.861/4 in the U.S. GPA system)

Research Interests

- **Applied Theory**
- **Databases**

Publications

IEEE S&P '25	**Sina Kamali** and Diogo Barradas. "**Anix: Anonymous Blackout-Resistant Microblogging with Message Endorsing.**" 2025 IEEE S&P. IEEE Computer Society, 2024. [PDF]
USENIX Sec '24	Patrick Tser Jern Kon, **Sina Kamali**, Jinyu Pei, Diogo Barradas, Ang Chen, Micah Sherr, and Moti Yung. "**SpotProxy: Rediscovering the Cloud for Censorship Circumvention**." In 33rd USENIX Security Symposium (USENIX Security 24), pp. 2653-2670. 2024. [PDF]
arXiv preprint	**Sina Kamali**, Taha Fakharian, Shayan Shabihi, Alireza Arbabi, Mohammad Saadati, Pouriya Tajmehrabi, and Behnam Bahrak. "**RPoA: Redefined Proof of Activity**". arXiv preprint arXiv:2210.08923 (2022). [PDF]

Research Experience

Under the supervision of Prof. D. Barradas — *University of Waterloo*

Research Assistant — *Jan. 2023 - present*

- Developing tools with the help of applied theory to help with information retrieval for people in areas with heavy internet restrictions. Our previous work has resulted in two publications in USENIX Security '24 and IEEE S&P '25.

With Prof. A. Chen & Prof. M. Sherr — *Universities of Waterloo, Michigan, and Georgetown*

Collaborated — *Aug. 2023 - Feb. 2024*

- Researched an alternative approach to censorship circumvention utilizing SpotVMs, which are cheap but volatile servers. Our work resulted in a publication in USENIX Security '24.

Under the supervision of Prof. B. Bahrak — *University of Tehran*

Research Assistant — *Aug. 2021 - Jan. 2023*

- Worked on an alternative blockchain consensus protocol based on Proof of Activity to combine the benefits of PoS and PoA protocols. Our work resulted in a paper that remains in preprint.

Under the supervision of Prof. P. Shariatpanahi — *University of Tehran*

Research Assistant — *Jun. 2022 - Jan. 2023*

- Researched the possibility of perfromance improvements on digital currencies.

Teaching Experience

University of Waterloo

Mentor	Women+ in Math, Directed Reading/Research Program	*Jan. 2024 - present*
Guest Lecturer	CS489/698: Privacy, Cryptography, Data Security, Prof. D. Barradas	*Jul. 2024*
Teaching Assistant	CS459: Privacy, Cryptography, Data Security, Dr. A. Kati	*Sep. 2024 - present*
Teaching Assistant	CS489/698: Privacy, Cryptography, Data Security, Prof. D. Barradas	*May. 2024 - Aug. 2024*
Teaching Assistant	CS456: Computer Networks, Prof. N. Limam	*Jan. 2024 - May. 2024*

University of Tehran

Supervising Teaching Assistant	Discrete Mathematics, Prof. S. Mohammadi	*Sep. 2021 - Aug. 2022*
Mentor	Cryptocurrencies, Summer of Code	*Jul. 2021 - Nov. 2021*
Teaching Assistant	Discrete Mathematics, Prof. S. Mohammadi	*Jan. 2020 - Sep. 2021*
Teaching Assistant	Computer Networks, Prof. N. Yazdani	*Aug. 2022 - Jan. 2023*
Teaching Assistant	Data Structures, Prof. H. Faili, Prof. F. Faghih	*Sep. 2020 - Aug. 2022*
Teaching Assistant	Software Engineering, Prof. R. Khosravi	*Aug. 2022 - Jan. 2023*
Teaching Assistant	Software Testing, Prof. E. Khamespanah	*Aug. 2022 - Jan. 2023*
Teaching Assistant	Artificial Intelligence, Prof. M. Moradi, Prof. Y. Yaghoobzadeh, H. Fadaei	*Jan. 2021 - Aug. 2022*

Talks

Anix

2024	**CrySP Seminar**, University of Waterloo	*Waterloo, ON*

Honors & Awards

2024	**Featured on**, CPI Student Newsletter Student Spotlights of November 2024	*Waterloo, ON*
2024	**Top Poster**, CPI Conference 2024	*Waterloo, ON*
2024	**Featured on**, CPI Student Newsletter Student Spotlights of June 2024	*Waterloo, ON*
2024	**Gained access**, RWC 2024 for volunteering	*Waterloo, ON*
2024	**Received scholarship**, WiM Mentorship Award	*Waterloo, ON*
2023	**Received scholarship**, International Master's Award of Excellence	*Waterloo, ON*
2020	**President**, University of Tehran ACM Student Chapter	*Tehran, Iran*
2018	**Ranked Top 0.1% in Konkour**, National Organization of Educational Testing (NOET)	*Tehran, Iran*
2018	**Received scholarship**, Supporter Foundation of the University of Tehran	*Tehran, Iran*

Professional Service

2025	**Program Committee**, CPI Graduate Student Conference (GradConf) 2025	*Waterloo, ON*
2024	**External Reviewer**, IEEE Network Operations and Management Symposium (NOMS) 2025	*Waterloo, ON*

Professional Developements

Switcharoo
University of Waterloo

Mix-nets on programmable switches — *Jan. 2024 - Jul. 2024*

- Researched implementing mix-nets at a switch level. Previous work had focused on implementing basic cryptography and packet chaffing, but the final piece, introducing arbitrary delays, was missing. We focused on introducing novel ways to add packet delays using smart switches.

Finger Printing GitHub Repositories
University of Waterloo

I know what you cloned last summer — *Apr. 2024 - Dec. 2024*

- Researched fingerprinting the traffic generated by cloning and interacting with GitHub repositories. Our preliminary results were promising, with an accuracy upwards of 95% on closed-world attacks.

Bitcoin and Cryptocurrency Technologies, Prof. Arvind Narayanan
Princeton University, Coursera

An online cryptocurrency course — *2020 - 2021*

- During this course, which was part of the master's program at Princeton University, I learned fundamental concepts regarding Bitcoin and other cryptocurrencies. I learned about how they achieve decentralization(!), how mining is done, alternative consensus protocols, etc. During this course, I implemented a simple blockchain network.

Crystaline
University of Tehran

A cryptocurrency powered by a redefined PoA protocol — *Aug. 2021 - Sep. 2022*

- Developed as a proof of concept on pure Python, this cryptocurrency incorporates a newly defined Proof of Activity as its primary consensus protocol. It was designed and researched by me and several other students of the University of Tehran.

DMCB
University of Tehran

The moderator for DM contests of University of Tehran — *Jun. 2022 - Aug. 2022*

- Developed as a moderator for the discrete mathematics course at the University of Tehran. DMCB was created using the Django framework.

Mini Kaggle — *Divar*

A Kaggle clone made by interns at Divar — *Jun. 2021 - Sep. 2021*

- A Kaggle clone made using the Django framework as a learning project at Divar in the summer of 2021. We used several software developing tools and libraries including Docker, Celery, Pandas, and etc. I learned how to effectively work as a software development team during this time.

Sins & Virtues — *University of Tehran*

A text-based game created as a passion project — *Feb. 2021 - present*

- Developed as a passion project. At first, it was programmed using Python, but after further consideration, it was rewritten using C++. The game encapsulates a rich set of fun mechanics. Follow this link to learn more.

Work Experience

Sotoon — *Tehran, Iran*

Software Developer — *Jan. 2022 - Aug. 2022*

- Worked on deploying older software on Docker Swarm and Kubernetes clusters. Worked on the official ”Sooton Cli” programmed using GoLang. Learned a great deal about working as a team in software development and the agile methodology.

Divar — *Tehran, Iran*

Software Developer Intern — *Jul. 2021 - Sep. 2021*

- Learned a wide variety of software development tools in the workshops held by Divar. Some of these tools were Git(Professional), RPC protocols, Django Framework, Kubernetes, SQL, NO-SQL databases, etc. Furthermore worked on a small project in which we developed a Kaggle clone from scratch.

Notable Academic Projects

Smart Debt Handler — *Cryptocurrency*

A smart contract made using Solidity

A smart debt handler similar to Splitwise, which tracks users’ debts and updates them based on the loops users create between each other.

BTC Address Maker — *Cryptocurrency*

An Address maker made using pure Python

This project was developed to further understand the math and explicit details of creating a key pair. This project can make any kind of famous key pairs in either the test net or the main net.

Network Function Simulation — *Computer Networks*

A simulation of network functions

A complete simulation of network functions created using C++. It supports various network components and uses multi-threading to run the simulations simultaneously.

Multi-Threaded Prediction — *Computer Networks*

A multi-threaded C program that predicts prices based on trained regression data

This project was created to toy with multi-threading concepts and to get more familiar with them.

Skills

Programming	High Intermediate: C++, Python, GoLang Intermediate: C, Java, Javascript, Solidity Beginner: Rust, Bash, LaTeX
Technologies	Git, Docker, Docker Swarm, Kubernetes, Ansible, Makefile
Software Engineering	Familiar with multiple object-oriented design patterns. Efficient with function-based designs. Fully familiar with Agile development and its concepts.
Web Development	Django, Django Rest, React, Spring
Operating Systems	Linux (Debian-based and Arch-based), MacOS

Languages

Persian Native

English Professional working proficiency · **TOEFL: 113/120 [R:30, L:30, S: 26, W:27] (Oct. 2022)**