KASRA SIAVASHPOUR

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EDUCATION

Sharif University of Technology (SUT), Tehran, Iran   2020–2025
Bachelor of Science, Computer Science
Allameh Tabatabaei High School (selective, non-governmental), Tehran, Iran   2016–2020
High School Diploma, Mathematics and Physics

RESEARCH INTERESTS

- Distributed & Decentralized Systems
- IoT networking
- Systems and Operating Systems
- Autonomous aerial/vehicular systems (FANET/VANET)
- Cluster-based routing and optimization (SDN-/ML-assisted)

PUBLICATIONS

- *The Loop of the Rings: A Fully Decentralized Reliable Cooperative System.*
  Manuscript in preparation for submission to the **IEEE Symposium on Foundations of Computer Science (FOCS) 2025**.

RESEARCH EXPERIENCE

Research Assistant, Institute for Research in Fundamental Sciences(IPM)
& Sharif University of Technology, Tehran, Iran   2024/09–present
Supervisor: Dr. Arash Vaezi

- Implemented LoR core in Go: rounds, checkpoints, verification teams, TCB updates.
- Ran parameter sweeps over α, β, p to measure verification accuracy and communication cost.
- Evaluated trader satisfaction and fractal-ring acceptance; reproduced key thresholds and trends.
- Built a reproducible Go CLI with structured logs and plots for experiment reporting.

Research Assistant, Sharif University of Technology, Tehran, Iran   2024/09–present
Supervisor: Dr. Hossein Peyvandi

- Conducted a survey of 100 papers on Self-Organizing Networks
- Built a comparison table to align methods, results, and gaps
- Wrote weekly progress reports and shared action items
- Ran weekly meetings with the team and tracked follow ups

Research Assistant, Sharif University of Technology, Tehran, Iran   2023/10–2024/01
Supervisor: Dr. Bardia Safaei

- Researching nature-inspired FANET and IoT cluster routing with mobility-aware benchmarking.
- Prototyped beaconing and neighbor discovery, analyzed energy–delivery trade-offs.
- Built reproducible pipelines (configs, seeds, scripts) for experiment reruns.

Research Assistant, Politecnico di Milano, Milan, Italy   2023/07–2023/09
Supervisor: Dr. Gianni Antichi

- Researched WebAssembly for systems acceleration and designed a benchmarking plan for CPU, memory, latency, and throughput.

HONORS & AWARDS

Top 0.1% among 155,250 candidates, Iranian University Entrance Exam (B.Sc.)	2020
1st place in National Hovercraft Competition (two consecutive years) — design & control	2016–2017
1st Place in Provincial Chess Competition (High School)	2016
1st place in Provincial Table Tennis Competition (High School)	2015

SELECTED TEACHING EXPERIENCE

Teaching Assistant, Sharif University of Technology

- **Computer Networks** — Dr. Hossein Peyvandi   Winter 2024
  - Held helper classes and office hours   - Designed and graded weekly assignments
- **Operating Systems** — Dr. Arash Vaezi   Winter 2024
  - Designed and graded weekly assignments   - Wrote rubrics and sample answers

  Piazza course page : [Link to Piazza].
- **Operating Systems** — Dr. Hossein Asadi & Dr. Rasul Jalili   Fall 2024
  - Designed and graded weekly assignments *(120+ students)*
  - Wrote rubrics and sample answers
- **Computer Networks** — Dr. Kambiz Mizanian   fall 2023
  - Designed homework and project checklists   - Built autograders and simple dashboards
- **Operating Systems** —Dr./ Mohaddeseh Mirbeygi & Dr. MohammadAli Mirzaei   fall 2023
  - Guided projects (threads, scheduling, IPC)
  - Designed and graded weekly assignments *(120+ students)*

NOTABLE PROJECTS

Go-Based Online Code Judge Platform   Winter 2024

- Built a full-stack Go online judge with auth, roles, problems, submissions/results, and an admin UI.
- Separate Docker based code runner with resource limits and isolation plus a clean modular layout for maintainable development. GitHub : [GitHub Link]

BitTorrent-style P2P Network (Python)   Spring 2023

- Added peer discovery and direct connections beyond the tracker, tested piece exchange and failures.
- Delivered a CLI client and documented protocol flows. GitHub: [GitHub Link]

Innovative Sort (Java) - Algorithm Study   Spring 2021

- Built and benchmarked a custom sort that beat Java's Arrays.sort on large synthetic arrays.
- Instrumented runs and reported complexity and empirical results. GitHub: [GitHub Link]

Golabi Social Media (Java, GUI)   Winter 2020–Summer 2020

- Developed core features (posts, messaging, media, follow graph) with basic MVC and code-style checks; integrated local persistence and user docs.
  GitHub: [GitHub Link]

Java GUI Games   Spring–Winter 2020

- *Battleship* — Networked gameplay with added features; clean-code practices.
  GitHub: [GitHub Link]
- *Snake & Ladder Master* — Enhanced classic game; GUI.
  GitHub: [GitHub Link]

SKILLS

Programming Languages: Java, Python, C/C++, Go, JavaScipt, Bash

Frameworks & Libraries: PyTorch, Tensorflow, scikit-learn, Matplotlib

Tools: Git, Docker, LaTeX, NS-3

Operating Systems: Ubuntu, Windows, macOS

Web Programming: Vue, Flask, HTML5, CSS

Languages: Persian (Native), English (C1)