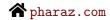# AMIR MOHAMMAD FADAEI AYYAM

✉ fadaei.ayyam@gmail.com  🏠 pharaz.com  ⌂ phorks

## INTERESTS

- Programming Languages
- Formal Methods
- Computer Systems
- Formal Logic

## EDUCATION

**M.Sc. in Computer Engineering**, Sharif University of Technology, GPA: 19.56/20    2023 – 2025 (expected)

    Relevant Courses: Specification and Verification of Programs, Program Development from Formal Specifications, Verification of Reactive Systems, Theory of Distributed Systems

**B.Sc. in Computer Science**, University of Tabriz, GPA: 16.91/20    2014 – 2019

    Relevant Courses: Foundations of Logic and Set Theory, Operating Systems, Computer Architecture, Computer Networks

## RESEARCH EXPERIENCE

**Research Group Member** – Sharif University of Technology    Oct, 2023 – Present
Distributed and Multiagent Systems Lab (DiSysLab)

- Advisor: Mohammad Izadi
- Preparing to undertake a master's thesis project on **embedding Morgan's refinement calculus in the Coq proof assistant**. The project aims to create a framework in which both specifications and implementations can be expressed, and the correctness of implementations can be derived from specifications using refinement steps

## ACADEMIC PROJECTS

**Software Foundations**    Feb, 2024 - Sep, 2024

- Self-studied volumes 1, 2, and 6 of the Software Foundations series, focused on logical foundations, programming language foundations, and separation logic
- Solution Repository: GitHub (private) – access available upon request

**Naraft**    November, 2023

- Implemented the Raft consensus algorithm in Rust
- Course: Theory of Distributed Systems
- The project was optional and I was the only student in my class that received full credit
- Repository: GitHub (private) – access available upon request

**Snowcast**    July, 2023

- Developed a toy internet radio broadcasting station in Rust
- Source: Project 1 – CSCI-1680 Computer Networks – Brown University (project specification)
- Completed independently as a self-initiated project to improve my Rust and systems programming skills
- Repository: GitHub (private) – access available upon request

**Colang**    Fall, 2016

- Designed a toy programming language and implemented an interpreter for it in C++
- Course: Compiler Design
- Repository: GitHub

**Polygraph**    Winter, 2016

- Implemented a parser and SAT-solver for propositional logic in C#
- Course: Introduction to Logic and Set Theory
- Repository: GitHub

## HONORS AND AWARDS

**Nationwide Masters Entrance Exam for Computer Engineering**                    Sep, 2023
Ranked 12$^{th}$ in Networking and Security, 15$^{th}$ in Software, 15$^{th}$ in Computer Architecture, and 18$^{th}$ in Artificial Intelligence, among more than 10,000 participants

## SKILLS

**Programming Languages**    C#, Rust, C/C++, Python, Java, TypeScript/JavaScript
**Theorem Provers**    Coq
**Tools**    Git, LaTeX

## TEACHING EXPERIENCE

**Teaching Assistant** – Sharif University of Technology
- Specification and Verification of Programs (40-684)                    Fall, 2024 (upcoming)
- Theory of Distributed Systems (40-661)                    Fall, 2024 (upcoming)

**Teaching Assistant** – University of Tabriz
- Advanced Programming (Java)                    Spring, 2017
- Fundamentals of Programming (C)                    Fall, 2015

## OPEN SOURCE PROJECTS

**Phork.Blazor.Reactivity**                    Jan, 2021 – Feb, 2021
- Developed an open-source library in C# that helps automating UI state management of WASM applications written in the ASP.NET Blazor framework
- Repository: GitHub
- Available on: NuGet Package Manager

## INDUSTRY EXPERIENCE

**Backend Developer** – SafarMood                    Jan, 2020 – Aug, 2020
- Developed a RESTful API in C# for a Global Distribution System (GDS) aimed at aggregating and selling flight tickets
- Project was canceled due to the COVID-19 pandemic's impact on the travel industry

## LANGUAGES

- Persian (native)
- English (fluent)
  - TOEFL iBT: 99 (R: 25, L: 27, S: 24, W: 23)                    Apr, 2019

## HOBBIES

Learning new languages (programming and natural), video games, learning about history, typing tests (monkeytype profile)