AMIR MOHAMMAD FADAEI AYYAM

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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 12th in Networking and Security, 15th in Software, 15th in Computer Architecture, and 18th 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)