

Feraidoon Mehri

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EDUCATION

Sharif University of Technology

Bachelor of Science (B.Sc.) in Computer Science

Tehran, Iran

9/2016 - 7/2021

- GPA: 17.1/20.0
- GPA of the last 64 credits: 19.0/20.0
- Notable courses (the grades are from 20): Statistics (20). Probability (19.8). Applied Stochastic Processes (19). Artificial Intelligence (19.7). Cryptography, Distributed Systems, and Blockchains (18.9). Advanced Programming (20). Big Data Engineering (19). Analysis of Algorithms (20). Engineering Mathematics (20).
- Voluntarily organized discussions around technical talks

Shahid Beheshti (National Organization for Development of Exceptional Talents) Sabzevar, Iran

Preuniversity in Mathematics & Physics

9/2015 - 7/2016

- GPA: 20.0/20.0

Shahid Beheshti (National Organization for Development of Exceptional Talents) Sabzevar, Iran

High School Diploma in Mathematics & Physics

9/2012 - 7/2015

- GPA: 19.9/20.0
- GPA of courses whose exams were standardized nationally for admission purposes: 20.0/20.0

RESEARCH EXPERIENCE

Research Assistant

SOAL Lab

12/2021 - ongoing

Sharif University of Technology

- Implementing and benchmarking various clustering algorithms for high-dimensional data

TEACHING EXPERIENCE

Teaching Assistant

Big Data Engineering

Spring, 2022

Ostovari, Boomari, Taheri, Sharif University of Technology

Teaching Assistant

Advanced Programming

Spring, 2022

Dr. Fazli, Sharif University of Technology

Teaching Assistant

Digital Design (Logic Circuits)

Spring, 2022

Dr. Arshadi, Sharif University of Technology

Teaching Assistant

Computer Networks

Spring, 2022

Dr. Arshadi, Sharif University of Technology

Teaching Assistant

Principles of Computer Systems

Fall, 2021

Dr. Arshadi, Sharif University of Technology

- Held workshops, designed and graded exercises, graded exams, and helped students with their questions

Teaching Assistant

Advanced Programming

Spring, 2018

Dr. Boomari, Sharif University of Technology

- Was responsible for a TA team, designed and graded exercises, and helped students with their questions

TECHNICAL SKILLS

Languages I use frequently (in rough order of proficiency): Zsh (shell scripting), Python, Julia, Elisp, Common Lisp

Languages I have written some useful things in (in rough order of proficiency): Perl, Clojure, Scala, Kotlin, Java, Racket, Lua, Javascript, Node.js, CSS, HTML, LaTeX, Golang, SQL, Nim, Rust, VB.NET, C#, C++

ML libraries: JAX, Flux.jl, scikit-learn

Backend technologies: GNU/Linux, Docker, Caddy, Akka, Redis, FastAPI

Developer tools: Git, tmux, emacs, vim, VSCode

HONORS AND AWARDS

- Ranked **6th** (out of 116k students) in the Iranian national undergraduate entrance exam in foreign language study of 2016 (99.99 percentile)
- Ranked 331st (out of 163k students) in the Iranian national undergraduate entrance exam in Mathematics & Physics of 2016 (99.80 percentile)
- Member of Iran's National Elites Foundation (INEF)

RESEARCH INTERESTS

- Deep learning
 - Distributed and incremental training, model merging
 - Model compression
 - Transformers
 - Generative modeling
 - * GANs
 - * Variational auto-encoders
 - Meta-learning
 - Learning the hyperparameters
 - Interpretability
 - Deep reinforcement learning
 - Deep natural language processing
- AI alignment
- Programming languages
- Bayesian statistics and optimization

NOTABLE OPENSOURCE PROJECTS

Popular FOSS projects I have contributed to

- **emacs**: added features
- **Doom emacs**: added features and fixed bugs
- **Flux.jl**: fixed mistakes in the documentation and wrote more documentation
- **Zsh**: reported a critical bug which was promptly fixed
- **tldr**: wrote documentation
- **fzf-tab**: fixed bugs
- **quil**: added features
- **learnxinyminutes.com**: fixed mistakes
- **Anime4KCPP**: added macOS support

My own FOSS projects

- **twitter-scraper** (Python, Zsh): a fault-tolerant, distributed Twitter scraper which stores the data in Neo4j, plus a high-level CLI API for querying the data and load testing the system
- **readability-cli** (Node.js): a CLI for Mozilla Readability
- **distributed-prime-generator** (Scala): a fault-tolerant, distributed prime number generator using the actor model (Akka)
- **brish**: a thread-safe Python library using the metaprogramming API which lets the user embed and run Zsh code in Python via parallel processes, supporting safely interpolating Python variables into the Zsh code
- **stochastic** (Julia): an infectious disease model, a Poisson picture redrawing filter, a colorful animator of a 2D ising model, and more
- **doom.d** (Elisp)
 - * An extension to the org-mode markup language to support visualizing and navigating annotated text for NLP purposes
 - * Integration with my library brish that allows embedding Zsh code in Elisp with support for safe interpolation of Elisp values

- * A poor man's language-agnostic doctests using literate programming (via org-babel) and version control (via git and ediff)
- **betterborg** (Python): a pluggable Telegram (user)bot based on Telethon (forked from uniborg)
 - * Integration with my library brish, to allow using Telegram as, essentially, a terminal emulator, with support for safely giving users limited access to specific Unix commands
 - * A time and habit tracker that supports hierarchical activities, with an always learning DSL to submit events and request visualizations
 - * A declarative DSL based on JSON for Telegram's inline query UI
 - * A prototype of a declarative DSL based on JSON for Telegram's bot UI
- **JupyterGarden** (Python): an HTTP REST API (using FastAPI) to run code in Jupyter kernels, for languages with expensive startup costs
- **Toy MIPS CPU**: an implementation of a simple, non-pipelining CPU using gate-level Verilog
- **possiblycat** (Golang): cat with a timeout on waiting for the first byte of stdin
- **prefixer** (Golang): a modern alternative to GNU cut
- **jalalici** (Golang): a CLI utility for Jalali (Shamsi) dates
- **My megarepo of scripts**
 - * Scraping tools (or API wrappers) for github.com, semanticscholar.org, arxiv.org, edu.sharif.edu, cw.sharif.ir, goodreads.com, reddit.com, tumblr.com, spotify.com, store.steampowered.com, nationalgeographic.com, bing.com, duckduckgo.com, fanfiction.net, kitsu.io, myanimelist.net, techcrunch.com, sounds-resource.com, lesswrong.com, messaged.com/tldr, web.archive.org, techmeme.com, news.ycombinator.com, sanjesh.org, patreon.com, ...
 - **t.me/techmemenews**
 - **t.me/tldrnewsletter**
 - **t.me/sharif_edu_diff**: notifications of changes in the scheduling, capacity, instructors, etc. of SUT's courses of the current semester
 - **sharif_course_list**: courses offered by SUT, in HTML and JSON, under git for archival purposes
 - **htmlmetadata** (Nim): a CLI app that extracts metadata (author, description, etc.) out of HTML
 - **ddg2json** (Python): parses scraped HTML of DuckDuckGo pages into JSON
 - **r_rational**: the subreddit r/rational archived in plain-text org-mode (good for, e.g., doing offline full-text searches)
 - * A general Zsh function memoizer using Redis
 - * A git-backed reminder system supporting natural language for setting the due time, recurrent reminders, and integration with Telegram and macOS/iOS (notifications, widgets, wallpapers)
 - * A Redis-backed RSS manager with integrations for Telegram and Amazon Kindle (supports podcasts, as well)
 - * A recurrent bill manager that parses my org-mode (plain-text) notes and presents me the bills likely to be due
 - * A whole suite of index-less information retrieval CLI tools for searching IRC logs, reminders, contacts, function definition locations, oft-used directories, music, ...
 - A Perl-based custom grep tool for tree-shaped documents (org-mode), plus a CLI UI for viewing the results (built on top of emacs)
 - * A file tagging system using the file names as the database
 - * A "thermostat" for display brightness based on the brightness of the current screen content
 - * A clipboard manager integrated with Zsh and emacs
 - * Integration with Supercollider, to allow using real-time, stochastic generative audio for auditory notifications in CLI applications
- **reo** (Racket): a toy DSL
- **rtl_reshaper_rs** (Rust): a CLI tool to reshape and reorder bi-directional, Arabic/Persian text for display in apps that do not support them natively

FOSS projects I wrote when I was a child

2007-2012

- **Aero Form** (VB.NET): A subclass of Form, it allowed the user to extend the Aero effect of Windows Vista to the whole window (or a subset thereof). It was downloaded 60k times on marketplace.visualstudio.com.
- **HyperAero Form** (VB.NET): The much-upgraded version of the above, it was my first lesson in marketing; while it was better than Aero Form for virtually all purposes, its not as catchy name doomed it to obscurity. It was downloaded 13k times on marketplace.visualstudio.com.
- **Notify Msg** (VB.NET): Probably my first useful library, it allowed one to show desktop notification popups, supporting images and other goodies. It was downloaded 1.5k times.
- **File Splitter** (VB.NET): A WPF-powered GUI for splitting and merging files.
- **Animation Maker** (VB.NET): Inspired by Windows Presentation Foundation's ease of creating animations, I built an animation library for Windows Forms using the reflection API ([demo](#)).