Mohammad Hosein Setak

mhstk.github.io
mh.setak38@gmial.com
mohamad-hosein-setak-05328319a
github.com/mhstk

Education

Amirkabir University of Technology — Tehran, Iran
Bachelor of Science: Computer Engineering — 2017–Current
last two year GPA: 17.42 out of 20

- Principles and Applications of Artificial Intelligence: 20 out of 20
- Microprocessor and Assembly Language: 20 out of 20
- Principles of Cloud Computing: 19.4 out of 20
- Principles of Computer & Programming: 19.75 out of 20
- Information Retrieval: 18.21 out of 20
- Advanced Programming: 18.5 out of 20
- Robotics: 18.13 out of 20

Nikan High School — Tehran, Iran
High School Diploma — 2013–2017
Overall GPA: 19.54 out of 20

Publications

I am currently doing research in the Viechle Routing Problem area, which has resulted in two papers until now. I'm assisting Sajad Hedayati, a Ph.D. student in industrial Engineering at Khajeh Nasir Toosl University. We use **Adaptive search approaches** to solve the problems. I coded the models and developed **heuristic algorithms** (like **Simulated Annealing**, **Genetics**, **ALNS operators**, etc.) to solve the models in the papers.

- **Re-supplying mobile parcel lockers in last mile logistics (In progress, Soon to be submitted)**
  We study the generalized vehicle routing problem with multiple time windows for re-supply mobile parcel lockers at selected locations in a set of fixed routes where mobile parcel lockers are moving on these routes during the day. We first provide a mixed-integer linear programming formulation for the problem and propose an adaptive large neighbourhood search algorithm for solving large sized instances.

- **Mixed-Integer Linear programming formulations for the clustered generalized vehicle routing problem (In progress)**
  The clustered generalized vehicle routing problem (CGVRP) is an extension of the vehicle routing problem in which demand points are grouped into a number of distinct zones. These zones are further grouped into different clusters. The objective of the CGVRP is to find a set of routes that a fleet of vehicles starts at depot and visits exact1y one node per zone in a manner that all zones in a cluster should be visited consecutively. This paper proposes three mixed-integer linear programming formulations.

Projects

See full list of projects on my github

- **Compiler** (Fall 2020)
  Developed a compiler to compile a new simple programming language to C from given grammar in **Python**. Compiler Project
- **AI course projects** (Fall 2019)
  During my Artificial Intelligence course, developed multiple projects which used **Graph Searching Algorithms**, **NLP**, **CSP** in **Python**.
- **E-Shop Website** (Spring 2021)
  Full-stack development of an E-shop website, **ReactJS** as front-end and **Django** as back-end. Hojre E-Shop Website
- **ML projects** (Spring 2021)
  During my Computational Intelligence course, developed multiple neural networks, which learned games like Floppy Bird, and hand-written digits in **Python**. (Airplane Project) (Hand-written Recognition)
- **IR projects** (Fall 2020)
  As my final project for Information Retrieval Course created a simple search engine for Persian documents and a program to groups docs in a certain number of clusters using **KNN**, which were implemented in **Python**. IR Project
- **Robotics** (Spring 2021)
  Developed a complete **PI controller** in ROS during my Robotics course, which travels inside a maze using **python-rospy**.
- **JDM: Java Download Manager** (Spring 2018)
  Developed a download manager like IDM in **Java**. JDM
- **Normal Tanks** (Spring 2018)
  Developed "Normal Tank" in my second semester, which is a 2d multiplayer **Java** game as my Advanced Programming course's final project. Normal Tank
- **Attendance System** (2013)
  Created an attendance system prototype in **C++** for schools using the fingerprint of students in my first year of high school.

Teaching

- **Teaching Assistant** at Amirkabir University of Technology — Fall 2021
  Principles of Computer & Programming Course
  Embedded and Real-Time Systems Course

Honors and Awards

- Ranked in the top 0.6% in the Nationwide University Entrance Exam Of B.Sc — 2017

Work Experience

CRM Developer Intern Tehran, Iran
Behsacorp Summer 2021–Current

- Worked with one of the largest datasets in the Middle East. Behsocorp uses Hamrahe Aval (A telecom company in the Middle East with more than 65 million subscribers)'s data, analyzes it, and gives reports.
- Developed a multiple functions and web service APIs for Hamrahe Aval's loyalty system that aims to keep customers loyal to the company using **Oracle Siebel CRM**.
- Worked effectively with multiple Scrum teams both internally and off-shore.

Developer Intern Tehran, Iran
Research Institute for Information and Communication Technology Summer 2020

- Wrote maintainable, solid code for scraping news data in **Python** for nearly 200 Persian news websites, running every hour to get the latest news and make them ready for **NLP** analysis.
- Wrote Facebook, Instagram crawlers to get the latest posts from news channels and specific users in **Python**.

Freelance Developer Tehran, Iran
Trading World Summer 2019

- Developed an advertiser Twitter bot to advertise the company by reading the latest tweets and searching for specific keywords in **Pytohn**.
- Created a dashboard to fully control the bot and make it customizable with customer's needs using simple **http/css/vanilla js** as front-end and **Python Flask** as beck-end.

Skills

- **Programming Development:** Python, Java, JavaScript, C, C++, Racket, VHDL
- **Database:** MySQL, PostgreSQL, Oracle Database, MongoDB
- **Web development**: Html, CSS, Sass, React
- **Data Computation:** Hadoop, Apache Spark (Beginner)
- **Other:** Git, Docker, Arduino, Proteus, Rospy, Latex

Research Interests

- Artificial Intelligence & Machine learning
- Data Science & Engineering
- Information Retrieval
- Image Processing & Computer Vision
- Software Engineering
- Distributed Systems