

Mohammad Jalali

COMPUTER ENGINEERING · GRADUATE STUDENT

✉ jalali.mohammad@ut.ac.ir | 🏠 mohammadjalali.com | 📺 alle9ro | 📺 mohammadjalali1996 | 🎓 MohammadJalali

Education

University of Tehran (UT)

Tehran, Iran

MASTER OF SCIENCE, **COMPUTER ENGINEERING**

Sep. 2021 - Feb. 2024

- **GPA: 17.91/20 (4/4)**, Faculty Average: 16.46/20
- **Thesis title:** An Efficient Asynchronous Second-Order Optimization Method with Parallel Distributed System
- **Supervisor:** *Dr. Abdorreza Torabi*
- **Related Courses:** Distributed Systems, Parallel Algorithms, Machine Learning Algorithms, Advanced Algorithms, Approximation Algorithms, Graph and Network Algorithms, Optimized Combinatorial Algorithms, Randomized Algorithms

Research Interests

- High-performance computing
- Deep Learning
- Data privacy & security
- Distributed systems
- Computer Vision

Publications

- **Mohammad Jalali**, Saeed Soori, Hadis Barati. *L-DATR: A Limited-Memory Distributed Asynchronous Trust-Region Method*. *IEEE/ACIS 24th International Conference on Computer and Information Science* (accepted 7 Aug. 2024, to be presented 22 Sept. 2024, expected publication Dec. 2024).
- Hadis Barati, **Mohammad Jalali**, Abdorreza Torabi. *Design and Implementation of an Efficient Parallel Algorithm for Sparse Principal Component Analysis*. *IEEE/ACIS 24th International Conference on Computer and Information Science* (accepted 7 Aug. 2024, to be presented 22 Sept. 2024, expected publication Dec. 2024).

Research Experience

University of Tehran (Parallel Computing Lab)

Tehran, Iran

RESEARCH ASSISTANT UNDER THE SUPERVISION OF *Dr. Abdorreza Torabi*

Sep. 2022 - Feb. 2024

- Developed and implemented a **Parallel Algorithm** that uses **Limited-Memory Methods** for **Distributed Optimization** to improve stability during the training of **Machine Learning** algorithms.
- Learned about **Synchronous** and **Asynchronous** communication patterns in **Distributed Systems**.
- Learned about **Apache Spark** Scheduling.
- Developed and implemented an Efficient Parallel Algorithm for **SPCA**(Sparse Principal Component Analysis) using **MPI**(Message Passing Interface).

Teaching Experience

University of Tehran (Parallel Computing course)

Tehran, Iran

TEACHING ASSISTANT UNDER THE SUPERVISION OF *Dr. Abdorreza Torabi*

Sep. 2023 - Feb. 2024

- Responsibilities included instructing lab sessions and grading. During programming sessions, introduced **CUDA** and **MPI**.

University of Tehran (Machine Learning course)

Tehran, Iran

TEACHING ASSISTANT UNDER THE SUPERVISION OF *Dr. Ali Fahim*

Feb. 2023 - Jun. 2023

- Responsibilities included instructing lab sessions and grading. Utilized Python libraries such as **PyTorch**, **NumPy**, and **Matplotlib**. Taught prerequisites in mathematics, particularly **Linear Algebra**.

Gatpier (Multiple courses)

Online

INSTRUCTOR ON [Gatpier website](#)

Sep. 2022 - Feb. 2023

- Taught a course on **Numerical Optimization**, covering methods such as **Line Search** and **Trust-Region**, based on the textbook Numerical Optimization by Nocedal.
- Instructed a **Deep Learning** course using **PyTorch**, focusing on **Transfer Learning**, generative adversarial networks (**GANs**), running models on **GPU**, and **CNN** architectures.
- Taught a **Python** programming course.

Work Experience

Gatpier

Tehran, Iran

FOUNDER

Jun. 2017 - Present

- As the founder of [Gatpier](#), I encountered numerous challenges related to **Team Leadership**, **Startup Management**, **Negotiation**, and **Marketing**. These experiences significantly enhanced my skills in guiding a team, handling the complexities of a startup environment, and effectively promoting our services.

Hamrahe Aval (MCI)

Tehran, Iran

PYTHON PROGRAMMER & SECURITY RESEARCHER

Jul. 2023 - Dec. 2023

- Utilized the **GPRS Tunnelling Protocol (GTP)** to analyze network packet data, identifying potential malicious packets. This involved in-depth inspection of packet contents to ensure network security.
- Developed tools in **Python** to facilitate and enhance the usage of **Wireshark** for network packet analysis, making the process more efficient and user-friendly.
- Handled various backend tasks using **Django**, which included developing and maintaining web applications and services crucial for the company's operations. This role required me to integrate multiple services and ensure smooth functionality across the system.

Licenses & Certificates

- **Computer Vision** [[Kaggle](#)]
- **OpenCV Bootcamp** [[OpenCV](#)]
Certificate ID Number:
f251aeb7fb2b4dadbddc3f2e945e0ebb
- **Advanced SQL** [[Kaggle](#)]
- **Linux Challenges** [[KodeKloud](#)]
Certificate ID Number:
2DF185F15A36-2DFF95D32D39-2DF17FBE49E8
- **Generative AI** [[Databricks](#)]
Certificate ID Number:
113476930

Extracurricular Activity

Professional Taekwondo Athlete

Tehran, Iran

2ND DAN BLACK BELT

Jul. 2004 - Aug. 2018

- Achieved **2nd Dan Black Belt** certification, a milestone that required significant **Discipline** and **Long-Term Commitment**.
- Maintaining and excelling in martial arts over many years has taught me how to effectively **Handle Stressful Situations** and perform well under pressure.
- Pursuing higher ranks in Taekwondo from a young age has developed my skills in **Communication** and **Leadership**.

Skills

Programming Languages	Python, C++, JavaScript, HTML, CSS, CUDA, LaTeX
Tools and Libraries	PyTorch, Numpy, Pandas, Scikit-Learn, OpenCV, Django, MPI, PyShark
Developer Skills	Git and GitHub, Parallel Programming
Languages	Persian, English