

Ali Hassani

COMPUTER SCIENCE GRADUATE STUDENT AT UNIVERSITY OF OREGON

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“Every problem is an opportunity in disguise.”

Education

University of Oregon

Eugene, OR

COMPUTER AND INFORMATION SCIENCE, PHD

Since March 2021

- Advised by **Prof. Humphrey Shi**
- Data Science depth. Field of research: Computer Vision.
- GPA: **4.15 / 4.3**

University of Kerman

Kerman, Iran

COMPUTER SCIENCE, B.S.

October 2016 to August 2020

- Ranked **first** out of 50+ students, **4.0 Major GPA** since the third semester
- CGPA: **3.81 / 4.0 (18.12 / 20)** • Major GPA: 3.94 / 4.0
- Thesis: Clustering-based feature selection, 2019. (4.0 / 4.0) • Computer Science Association Member

Research Interests

- Computer Vision** Vision transformers, self-supervised learning, representation learning, re-identification, and segmentation.
- NLP** Transformers, attention-based models.
- Data Mining** Clustering methods and recommendation systems.

Publications

- 2021 **Ali Hassani, Steven Walton, Nikhil Shah, Abulikemu Abuduweili, Jiachen Li and Humphrey Shi**, Escaping the Big Data Paradigm with Compact Transformers. [GitHub](#) • [arXiv](#)
- 2020 **Ali Hassani, Amir Iranmanesh, Mahdi Eftekhari and Abbas Salemi**, DISCERN: Diversity-based Selection of Centroids for k-Estimation and Rapid Non-stochastic Clustering. *International Journal of Machine Learning and Cybernetics*. [DOI](#) • [arXiv](#)

Skills

- Programming** Python • C/C++ • PHP • MATLAB • R • JavaScript • C#
- General Knowledge** Docker • \LaTeX • Git • Shell • HTML & CSS
- ML Frameworks** PyTorch • TensorFlow • Scikit-Learn
- Data Management** MongoDB • MySQL • SQLite • SQL Server • MS Access • Pandas
- Languages** English, Farsi

Experience

RESEARCH EXPERIENCE

SHI Lab

University of Oregon

GRADUATE RESEARCH ASSISTANT

Since February 2021

My research areas are vision transformers, and self-supervision for representation learning. Our first project, Compact Transformers, was one of the first applications of transformers to small sets of data, which is also trainable on average CPUs.

Mahani Mathematical Research Center

RESEARCH ASSISTANT

Kerman, Iran

May 2019 to January 2021

I worked on multiple unsupervised learning research projects. One was DISCERN (see publications), and others included semantic analysis using matrix methods, and unsupervised feature selection using self-representation.

Department of Computer Science, University of Kerman

UNDERGRADUATE RESEARCHER

Kerman, Iran

April 2019 to August 2020

I worked as an undergraduate researcher on two separate research projects: a clustering-based feature selection method, and text clustering using Nonnegative Matrix Factorization.

TEACHING EXPERIENCE

Department of Computer and Information Science, University of Oregon

GRADUATE TEACHING ASSISTANT

Eugene, OR

Spring Term, 2021

CIS 322 (Introduction to Software Engineering) lab instructor and teaching assistant. I was in charge of showing demos, assigning projects and homeworks, and grading them.

Mahani Mathematical Research Center

MACHINE LEARNING WORKSHOP INSTRUCTOR AND COORDINATOR

Kerman, Iran

January 2021

Coordinated and held the workshop online, gave lectures and wrote programming examples on data representation and feature engineering, introduction to PyTorch, classical learning algorithms, support vector machines, neural networks, convolutional networks and recurrent networks.

Department of Applied Mathematics, University of Kerman

LINEAR ALGEBRA TEACHING ASSISTANT

Kerman, Iran

Fall Semester, 2019

Instructed programming using Python, and the *numpy* library and its linear algebra functions. Introduced basic machine learning tasks such as clustering, spectral embedding, and principal component analysis.

Department of Computer Engineering, University of Kerman

INTERNET ENGINEERING TEACHING ASSISTANT

Kerman, Iran

Spring Semester, 2019

Instructed the class on server-side PHP programming as well as creating web clients using jQuery and AJAX.

Department of Computer Science, University of Kerman

ADVANCED PROGRAMMING TEACHING ASSISTANT

Kerman, Iran

Spring Semester, 2019

Gave programming assignments, advised the students on their projects in object oriented programming using C#.NET.

Department of Computer Science, University of Kerman

ADVANCED PROGRAMMING TEACHING ASSISTANT

Kerman, Iran

Fall Semester, 2017

Gave advice to students on their projects in object oriented C++, assisted the lecturer with the final project evaluations.

PROFESSIONAL EXPERIENCE

Zaravand Computer Co.

MACHINE LEARNING ENGINEER

Kerman, Iran

Sept. 2020 to Present

I am the company's machine learning consultant and engineer for the new universal office management software which is in the development stage. My responsibilities include the programming and documentation of the ML services built into the software. One of the services is automatic task category suggestion, duration estimation and description auto-completion for the task management subsystem. I designed an end-to-end recurrent model which would adapt in size depending on the amount of user data, classify and estimate the different fields using linear heads while also performing text auto-completion. I created the core package which could fetch, parse, encode and learn the data automatically and wrote the API using Flask.

Diayar, LLC.

LEAD WEB DEVELOPER

Kerman, Iran

2018 to 2019

Developed the web service APIs as well as the web client for the startup Diayar, which was designed to assist diabetes patients. The startup was one of the finalists at Silk Road Startup accelerator, Kerman regional. I was also in charge of pitching the startup during the event.

Web Developer

FREELANCER

Kerman, Iran

2016 to 2018

Developed websites and online services during summer breaks including an online pay-stub management system for a private company, and web hosting management for individuals and institutions.

UNIVERSITY SERVICE

The 10th Seminar on Linear Algebra and its Applications

Kerman, Iran

TECHNICAL COORDINATOR

Aug. 2020

I was in charge of technical coordination of the seminar which was held virtually due to the COVID-19 pandemic. Some of my contributions were preparing of the seminar live-stream system, providing technical assistance to invited speakers from around the world, and partially moderating the Q&A sessions after the plenary lectures in English.

Mahani Mathematical Research Center

Kerman, Iran

DATA MINING AND MACHINE LEARNING GROUP MEMBER

2019 to 2020

Attended weekly discussions, courses and gave advice to other members. Gave two lectures in the weekly meetings: Clustering-based feature selection (with M.S. Ebrahimi) and FaceNet: Facial image representation learning using triplet loss (with A. Iranmanesh).

Department of Computer Science, University of Kerman

Kerman, Iran

COMPUTER SCIENCE ASSOCIATION MEMBER

2018 to 2019

Held the 2nd Saba Programming Contest, programming courses for undergraduate students and gave advice on coursework.

Honors & Awards

2021	1st Place , 3MT (3 Minute Thesis) Competition. https://gradforum.uoregon.edu/2021-winners/ .	UOregon, Grad. School
2020	Top undergraduate student researcher , Awarded top researcher among undergraduate science major students in the Province of Kerman for research conducted in Machine Learning.	Provincial Govt. of Kerman
2020	Top undergraduate student researcher , Awarded top researcher among undergraduate students in the College of Mathematics and Computer Science for research conducted in Machine Learning.	UofKerman
2020	Top undergraduate student researcher , Awarded top researcher among undergraduate students in the Department of Computer Science for research conducted in Machine Learning.	UofKerman
2019	Distinguished researcher , Awarded distinguished researcher among undergraduate students in the College of Mathematics and Computer Science for research conducted in Machine Learning.	UofKerman
2016-2020	Scholarship Fund for undergraduate research and studies , Received a scholarship fund per semester based on the semester's GPA, number of credits and rank.	NICICo
2015	Finalist , Entered the contest with a voice assistant application in my native language and won the regional, entered the finals in Tehran.	Khawrazmi International Awards

Extracurricular Coursework

Deep Learning Specialization

[View specialization certificate](#)

DEEPLARNING.AI

Aug. 2020 - Sep. 2020

5 Courses including Convolutional Neural Networks and Sequence Models. Grade Achieved: 100%

Machine Learning

[View certificate](#)

STANFORD UNIVERSITY

Aug. 2020

Grade Achieved: 100%

Getting Started with AWS Machine Learning

[View certificate](#)

AMAZON WEB SERVICES

May. 2020

Grade Achieved: 97.14%

Convolutional Neural Networks for Visual Recognition (CS231n)

[Audited via YouTube](#)

STANFORD UNIVERSITY

Mar. 2020

Test Scores

GRE General Verbal Reasoning: 156 / 170, Quantitative Reasoning: 164 / 170, Analytical Writing: 4.0 / 6.0 • March 2019

TOEFL iBT Total score: 115 / 120 • Reading: 28 / 30, Listening: 29 / 30, Speaking: 30 / 30, Writing: 28 / 30 • August 2019