Hassan Kazemi Tehrani

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PERSONAL DETAILS

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RESEARCH INTERESTS

- Internet of Things
- Edge Computing
- Machine Learning
- Computer Networks
- Computer Vision
- Cloud Computing

EDUCATION

MASc. Electrical and Computer Engineering 2022-present

Concordia University, Montreal, Canada

GPA: 4.15/4.30

Thesis area: Machine Learning in E-Health

BSc. Computer Engineering 2017-2022

Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran

GPA: 17.84/20 (3.92/4)

Thesis: Real-time Any-to-Many Voice Conversion in the Persian

SKILLS

Languages	Persian (mother tongue), English (IELTS: overall 7.0)
Software and Cloud Engineering	Scrum, DevOps, Software Architecture, Microservices, Single-Sign-on, Software Authentication (SAML2, OIDC, OAuth2), Software Security, Google App Engine, Docker, Kubernetes
Programming Languages	Python, C, Nodejs, Javascript, Java, Kotlin, SQL
Operating Systems	Linux (Ubuntu,Kali), Windows
Libraries and Framewroks	NumPy, Pytorch, Librosa, Torchaudio, Pandas, Matplotlib, Pillow
Database systems	MongoDB, MySQL, SQLite, PostgreSQL
Web Development	Django, HTML, CSS, Bootstrap, JQuery, Express, EJS, REST API
Software and Simulators	Git, Camtasia, LaTeX, Proteus, ArduinoIDE, ISE, Wireshark, GNS3, Omnetpp

RESEARCH EXPERIENCE

Any-to-Many Voice Conversion in the Persian speech 2021-2022

I have researched to find a way to implement an Any-to-Many Voice conversion model in Persian speech under the supervision of Prof. Zeinali. This model is able to convert the timbre of utterances from any speakers without losing linguistic contents. In addition, This model performs voice conversion with speakers seen or unseen during training. There are few models in papers about this subject that work only with English speech. Since no one has worked in this area for the Persian language, It will hopefully turn into a paper. Code on github

SELECTED PROJECTS

- **Acoustic scene classification**

  Implemented an audio classifier using CNN to detect acoustic scene. Task 1 of DCASE 2013 challenge held by IEEE.
  Libraries used : Pytorch, torchaudio, numpy
  Dataset : IEEE AASP CASA Challenge
  Code on github

- **NeuroEvolution Gamer**

  Implemented an AI agent to play a 2D game and learns to maneuver via neural network + genetic algorithm.
  Libraries used : numpy, matplotlib
  Code on github

- **Handwritten Digit Recognition**

  Implemented a simple neural network to detect handwritten digit images.
  Libraries used : numpy, matplotlib
  Dataset : MNIST
  Code on github

- **Fuzzy C-Means Clustering**

  Used the concepts of fuzzy c-means to cluster the given data.
  Libraries used : numpy, matplotlib, pandas
  Code on github

- **Router IP lookup**

  Simulated IP lookup for routers.I used algorithm mentioned in "binary search schemes for fast IPlookup".
  Code on github

- **AI agent for solving sudoku**

  Implemented a CSP model to solve sudoku with colors and numbers using backtrack algorithm.
  Code on github

- **NLP spam or ham**

  Used Bigram model to detect ham or spam comments. Also used backoff model for unkown words.
  Code on github

- **AI agent for solving puzzle card game**

  Implemented searching algorithms like BFS, IDS and A to solve a puzzle game.*
  Code on github

- **Netwolf**

  Designed a protocol that enables the users to transfer files via a P2P connection.
  Libraries used : socket
  Code on github

- **Foofle**

  Designed relational database for mailing system, includes ER diagram, macros and functions.
  also implemented UI for admins and users.
  Libraries used : Express,EJS,mariaDB
  Code on github

WORK EXPERIENCE

Web Chair 2023
The Canadian Society of Information Theory, Freelance
The web chair of the 31st Biennial Symposium on Communications 2023 (BSC 2023) conference. "Visit website"

Software Development Engineer 2022-2023
IDmelon Technologies Inc., Full-time
I was working as a software architect and programmer in Single Sign-On team of IDmelon. The main focus was developing brand-new ideas for authentication and authorization.

Server-side Programmer and Server Manager 2019-2021
Vira Co., Full-time
I was a full-stack developer and server programmer. My main responsibilities were server management and maintenance of "Doctor Tajviz," a web application for booking doctor appointments.

HONORS

- Eligible to Choose Second Major due to outstanding performance, Amirkabir University of Technology, Tehran.
- Ranked as Top 10% among more than 100 undergraduate students in CE Department, Amirkabir University of Technology, Tehran, 2021.
- Ranked as Top 1% among more than 300,000 participants in National Entrance Exam for Undergraduate State Universities, Tehran, 2017.
- First place in National "AERUP" innovation event, Amirkabir University of Technology, Tehran, 2018.

TEACHING ASSISTANT EXPERIENCE

Introduction to Digital Communications (ECE, Concordia) Winter 2023
Instructor: Prof. Jun Cai

Computational Intelligence (CE, AUT) Fall 2021
Instructor: Prof. M.Mehdi Ebadzadeh

Multimedia Systems (CE, AUT) Spring 2021
Instructor: Prof. Siavash Khorsandi

Computer Networks (CE, AUT) Spring 2021
Instructors: Prof. Masoud Sabaei and Prof. Pooya Hejazi

Operating Systems (CE, AUT) Fall 2020
Instructor: Prof. S.Ahmad Javadi

Logic Circuits (CE, AUT) Fall 2020
Instructor: Prof. Mehdi Sedighi

REFERENCES

References Available Upon Request