Reza Ramezanpour

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Education

Sharif University of Technology — *Tehran, Iran*

Master of Science in Electrical Engineering — *Sep 2021 - ongoing*

GPA: 4.00/4.00-19.42/20.00

Sharif University of Technology — *Tehran, Iran*

Bachelor of Science in Electrical Engineering — *Sep 2016 - jan 2021*

GPA: 3.76/4.00-17.57/20.00

Beheshti High School — *Tehran, Iran*

Affiliated with National Organization for Development of Exceptional Talents [NODET] — *Fall 2011 - Fall 2016*

GPA: 4.00/4.00

Achievements

- **Ranked 4th in National University Entrance Exam for Bachelor Degree among 200,000 competitors**
- **Ranked 1st among graduate students in Sharif University of Technology's Electrical Engineering Department**
- **Ranked 42th among 162 undergraduate students in Sharif University of Technology's Electrical Engineering Department**
- **Member Of Iran's National Elites Foundation**

Research Interests

- **Parallel Data Processing**
- **Machine Learning, Deep Learning**
- **Data Mining and Big Data Analysis**

Experience

Teaching Assistant, Logic Circuits — *September 2018 - January 2019*

Lab Assistant and guiding students about circuit design and coding

Teaching Assistant, Computer Architecture — *January 2019 - June 2019*

Lab Assistant and guiding students about coding and simulating

Teaching Assistant, Numerical Calculation — *September 2019 - January 2020*

Theoretical Homework designing and assessing

Teaching Assistant, Object Oriented Programming — *January 2020 - July 2020*

Computer Homework designing and assessing

Teaching Assistant, Computer Architecture — *January 2022 - July 2022*

Lab Assistant

Teaching Assistant, Computer Architecture — *January 2023 - July 2023*

Lab Assistant

Advertisement Manager and Website Developer, NeuroScience Symposium — *Winter 2019*

Selected Course Projects

Superscaler MIPS

Advance Computer Structure

- Developing a Verilog-based implementation for a MIPS microarchitecture in superscalar mode with branch prediction

Fast and Scalable GNN Training

Efficient Implementation of Neural Networks

- Creating a simulation tool to implement a novel algorithm that enables rapid training of Graph Neural Networks

Data Analysis of Tehran's Traffic Data Course Project

Big Data Analysis

- Recommending new paths for each individual car using Frequent itemsets Algorithm (FP-Growth)
- Finding and clustring cars with similar driving patterns using LSH
- Finding important points(Traffic cameras) using PageRank
- Clustring Traffic cameras using Community Detections algorithm (GraphX)
- Designing a Recommender System to suggest new paths using ALS.

Finding nearest neighbor distance histogram (with GPU)

Parallel Programming and Architectures Course Project

- Analysis distance of 10000 data with 128 dimension from 1000000 data with same number of dimension and finding histogram of these distances with GPU for each query

Object Recognition in Images with Keras and Tensorflow

Machine Learning Course Project

- Implementing CNNs through a calssification task on CIFAR-10 dataset using Keras Library

Hand Digit Recognition

Signal and Systems Course Project

- Hand digit recognition base on image features, shadow reduction, machine learning algorithms and optimizing it on Neural network, in matlab and also python

Single Cycle and Multi Cycle Implementation

Computer Architecture Course Project

- Single cycle and Multi cycle implementation of MIPS architecture, in Verilog

Checkers Game

Java Programming Course Project

- Checkers game with java language and with graphic features with java FX with all features of main game

Voice Recorder

FPGA/ASIC Systems Design Course Project

- Building a voice recorder that records and plays back 8-bit digital audio samples, in Verilog

P2P Channel Simulator

Data Networks Course Project

- Designing and simulating peer to peer channel and define its routing protocols with socket programming , in Python

Bachelor Project

Database Optimization

Database and Machine Learning

- Designing and optimizing a database model for traffic data. This database is used to query different patterns of traffic as fast as possible and to tune hyperparameters of a nueral netwrok to predict traffic intensity.

Master Project

AI in Network

Algorithm design and optimization

- **Efficient Design And Implementation of Private Traffic Shaping Algorithm For Streaming Traffic.**

Selected Courses

Fundamentals of Programming: 20/20
Numerical Calculation: 19.4/20
Java Programming: 20/20
Parallel Programming and Architectures: 20/20
FPGA/ASIC Systems Design: 19.5/20
Computer Architecture and Microprocessor: 20/20
Data Networks: 18.5/20
Machine Learning: 19.0/20
Cryptography and Network Security: 18.4/20
Big Data Analysis: 19.4/20
Advance Computer Structure: 20/20
Reinforcement Learning: 18.2/20
Statistical Learning: 18.4/20
Efficient Implementation of Neural Networks: 20/20

Computer Skills

Programming Languages

- C/C++, Python, JAVA, Scala, Assembly

Hardware Design Languages and Programs

- Verilog, Proteus, Model-sim, Xilinx ISE

Web Development

- HTML, CSS, JS, FLASK, MYSQL, MongoDB, Django

Assembly and Micro-controller

- MIPS, AVR, ARM, x86, Arduino

Linux

- Bash Scripting

Documentation

- LATEX, Microsoft Office

Others

- CUDA