Mahdi RASTEGARI
AI Enthusiastic | Senior .Net Developer

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I'm a senior .Net developer with high skills in math, algorithm and machine learning. I am skilled in problem-solving and resource optimization, and also parallelization in both CPU and GPU. I've been part of several web-based and windows based applications, all of which have extensive connection with AI and external hardware. **I've managed the software side of CellNama (Slide Scanner System), which is installed in multiple pathology labs with an excellent satisfaction ratio.**
For more information about my experience, you can visit my personal website in mahdirastegari.somee.com

🕐 CURRENT ACTIVITIES

Professional : Head of TRACC developers (C#, WPF, Xamarin, Algorithm Programmer) at Basemap (UK)
Leisure Time : Research in ViT(Vision Transformers) and its implementation in python

💼 EXPRIENCE (OCCUPATION)

Cuurent
November 2020

Software and Algorithm Developer, BASEMAP, Guilford, United Kingdom
> Developing a road network analysis software known as TRACC
> Desktop frontend is WPF and web frontend is Blazor which both connected to ASP.Net core
> Work with imporing-exporing GIS files like GTFS, TXC, ShapeFile in efficent way
> Work with GIS 3rd party library like ArcGIS, ThinkGeo
> Use Test Driven Development to implement the code
> Use git + azure as core of our devops, and also develop custom pipeline as our release pipeline
> Desing and implement an algorithm for GIS routing
> Optimize the performance of previous algorithms by using Hash Tree and better use of resources like using DirectX and CUDA for processing arrays.

Algorithm | DirectX | CUDA | C# | EF | Parallelism | Git | Azure

November 2020
June 2016

Software Developer, NEGARESH RAYANEH POOYA, Tehran, Iran
> Design and implementation of an expandable scanner controller software.
> Design and implementation of peer-to-peer slide management system capable of Telepathology.
> Design and implementation of a powerful and secure desktop WSI viewer and annotator software.
> Design and implementation of real-time "encrypted" WSI read/write system
> Implementing CUDA-enabled focusing and image pre-processing algorithms
> Implementing an on-the-fly deep learning-based algorithm for cell and nuclei detection during slide scanning.
> Design and implement the Mask R-CNN model in TF to detect the tissue region on slide preview

C# | MVC | Parallelism | CUDA | Tensorflow | CNTK | SQL Server | EF | ASP.Net

March 2015
June 2016

Software Developer, MOBARAKEH STEEL COMPANY, Mobarakeh, Isfahan, Iran
> Design and implementation of the near real time software include watch-dog itself
> Design and implementation workflow to read sensors data (ADAM) as well as images from IP Camera.
> Processing the images to detect failure or issues on making steel process by using Edge Detecion Technique
> Call external hardware as emergency alarm when failing detected

WinForm | SQL Server | TCP/UDP | MATLB | Image Segmentation and Detection | SVM | USB Protocol | RS485

✅ COMPUTER SKILLS

Programming Language Microsoft .Net (**C#**), **C++**,**MATLAB**, **Python**, CUDA, JavaScript, TypeScript, CSS, HTML
Database Microsoft SQL Server, Sqlite, SqlCompact, MySQL, PostgreSQL
Development Tools **Microsoft Visual Studio**, **Visual Studio Code**, **JetBrain Rider**, GIT, Resharper
Testing UnitTest, Integration Test, Acceptance Test
Others Algorithm, Optimization, Paralellization

☺ SELECTED COURSES

Course	Teacher	Rank	Grade
Advanced Eng Math	Prof.Mojtaba Dehmolaian	1st	A+
Image Processing	Prof.Soltanian Zadeh	1st	A+
General Math 1,2	-	1st	A+
General Physic 1,2	-	1st	A+

🖥 PROJETS

TRACC
2020 - 2022
🔗 https://www.basemap.co.uk/tracc/
TRACC is multi-modal travel time anlysis software which include the customer data for its analysis, this software are usually used by big organization like municipality

`WPF` `Entityframework` `GIS` `MVVM-Light` `StructureMap` `AutoMapper` `XUnit` `A*` `Dijkstra`

TRACC LICENSE SERVER
2020 - 2022
🔗 https://www.basemap.co.uk/tracc/
TRACC license server is the website to manage licensing for TRACC's Customers, apart from that, this website lock and obfusticate TRACC to stop extracting code from it

`ASP.Net Core` `Identity` `Blazor WASM` `MediatR` `FluentValidation` `XUnit`

SLIDE SCAN PRO
2016-2020
🔗 https://www.cellnama.com/products/slide_scanner/intro
Slide Scan is software that connect to its hardware and create an virtual slide based on real slide, you can find some Virtual Slides Here

`WPF` `MultiThreading` `CUDA` `Entityframework` `Tensorflow` `CNTK` `OpenCV`

LAM VIEWER
2016 - 2020
🔗 https://caseviewer.cellnama.com/
Client application of Slide Scan Pro which first developed by WPF with full of functionality, but after a years, by using IONIC, it's developed in multi-platform type

`WPF` `Apache Cordova` `Ionic` `Angular`

DORSA
2015-2016
🔗 https://dorsa-co.ir/
Dorsa is rich and real time desktop application with simple design to detect errors and failures in steel pellets.

`WinForm` `MATLAB` `ARM` `TCP/IP`

🎓 EDUCATION

2015-2018	**Masters in Communication Systems** , University of Tehran **Thesis Title :** Beamforming and resource allocation in mm-wave massive MIMO **Thesis Description :** Represent a huristic solution by optimize the beam-alignment problem in anglog beam-forming which eventually led to publish two articles. **GPA :** 16.68/20 (without thesis mark) **Rank :** 1/12 **Supervisor :** Dr.Ali Olfat **Thesis Mark :** Excellent
2011-2015	**B.Sc. in Electrical Engineering**, Isfahan University of Technology **Thesis Title :** Reduction of patient motion artifacts in Digital Subtraction Angiography (DSA) using image processing and image registration tools **GPA :** 17.6/20 **Supervisor :** Dr.Saeid Sadri **Thesis Mark :** Excellent
2013-2017	**B.Sc. in Computer Engineering**, Isfahan University of Technology **Thesis Title :** Desing and implement digital oscilloscope by take advantabge of ARM microprocessor for android OS **GPA :** 17.38/20 **Supervisor :** Dr.Behzad Nazari **Thesis Mark :** Excellent

🎖 AWARDS

APRIL, 2020 :	Awarded a best software developer at NRP company due to most Iranian's pathology was completely satisfy with the performance of SlideScan and LamViewer.
JUNE, 2018 :	Member of Iran's National Elite Foundation and awarded permission for passing the military service through working on a project.
AUGUST, 2015 :	Ranked in the top 1% among 10,000 participants in Nationwide University Entrance Exam for the master program.
MARCH, 2013 :	Awarded permission for studying double major simultaneously from the Isfahan University of Technology talent organization.
JANUARY, 2012 :	Awarded cash prize for achieving the rank of 7 among 1,000 participants in the Isfahan University of Technology (IUT) Entrance.
AUGUST, 2011 :	Ranked in the top 0.3% among 252,000 participants in the Nationwide University Entrance Exam
APRIL, 2009 :	Awarded a gold coin for success in the Mathematical Olympiad in the local region, Isfahan, Iran.

📖 PUBLICATIONS

ANALOGUE BEAMFORMING SOLUTION FOR BEAM-ALIGNMENT PROBLEM 2020
🔗 https://ietresearch.onlinelibrary.wiley.com/doi/10.1049/iet-com.2020.0150
M. Rastegari, A. Olfat and E. Amini, "Analogue beamforming solution for beam-alignment problem," in IET Communications, vol. 14, no. 15, pp. 2576-2583, 15 9 2020, doi : 10.1049/iet-com.2020.0150.

`Optimization` `Convex Problems` `MATLAB`

A NEW METHOD FOR THE SOLUTION OF HYBRID ANALOG DIGITAL BEAMFORMING PROBLEMS 2020
🔗 https://onlinelibrary.wiley.com/doi/abs/10.1002/oca.2636
Amini, E, Reza Marzban, H, Rastegari, M. A new method for the solution of hybrid analog digital beamforming problems. Optim Control Appl Meth. 2020 ; 41 : 1735– 1748.

`Mathematics` `Optimization` `Convex Problems` `MATLAB` `CUDA`

🔤 LANGUAGES

> **English** Professional Proficiency (IELTS 7)
> **Persian** Fluent

➕ STRENGTHS

> Problem Solver
> Self-motivated
> Creative
> Mathematical skills

❝ REFERENCES

Dan Saunders
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BASEMAP.LTD, GUILFORD, UNITED KINGDOM
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