SUMMARY

Known as: a self-motivated, self-starter, team player, highly passionate, hardworking, and fast learner; strive to consistently exceed expectations. Effectively handle concurrent multiple tasks. Excellent problem-solving and troubleshooting skills. Recipient of *Australian Global Talent visa* in the data science domain.

Career Objective: 6+ years of experience with employing and developing cutting-edge tools and approaches to support the discovery of novel applications in data science. I have demonstrated hands-on experience with various types of data, analysis, management, modeling, and visualization. I also have a solid background in collaboration with various stakeholders and clients.

KEY SKILLS

- Strong problem-solving abilities with demonstrated experience in resolving complex issues.
- Strong conceptualization skills to break-down complex problems into achievable sub-components.
- Deep knowledge of statistics, modeling, and prediction algorithms.
- well-versed in machine-learning and stochastic modeling technologies (PyTorch, Sklearn, Pomegranate, Hidden Markov Models, Hawkes Point Process, MLE, Tests).
- Demonstrated background in Natural Language Processing (BERT, LDA, Aspect-based Sentiment analysis) and text mining.
- Solid experience with relational databases, Oracle, SQL Server, PostgreSQL + PostGIS, PL/SQL.
- Professional programming skills in Python, R, and C#.
- Principles of Agile leadership.
- Highly adaptable, flexible person who embraces teamwork while can work independently.
- Strong written and verbal communication skills.

WORK EXPERIENCE

Geospatial Data Scientist (Feb 2022 - Current)

Australian Urban Research Infrastructure Network (AURIN) Main responsibilities:

- Initializer and owner of an R&D project for the development of *Urban <u>Digital Twins</u>* in AURIN:
 - Implementing Agile leadership, setting Scrum boards, and developing user stories.
 - Conducting market search, literature review, and project scoping.
 - Contributing to the design of the business model, mission, and vision exploration.
 - Proposed a big picture of the project as well as a conceptual and logical framework.
 - Collaborated with the team lead in developing a grant proposal aligned with this project to AURIN's management board.
 - Leading two other data scientists in developing showcase scenarios, contributing to the main project.
 - Designed a project proposal for social-media-aware digital twins, including the definitions of background and key deliverables, the required tools and datasets, risks and challenges, and a proper time plan.
 - Collaborating with the team lead as well as with two other two domain specialists in this project.
- Collaborated with external researchers in finalizing the Liveable City Digital Twin (LCDT) project.
 - Proposed and implemented an Object Relational Mapper technology (SQLAlchemy) to ensure the maintainability and transferability of the logic.
 - Refactored codes, set up a virtual server, and developed logic using Postgres, Python, SQLAlchemy, Flask, and Cesium.

- Contributed by designing workshops as well as presenting the work in internal and external communities.
- Proposed an assessment framework for AURIN's High-Impact Projects.
- Participated in AURIN's Social Data Scientist recruitment process by being a member of the shortlist & interview panels.

Main achievements:

- Improved conceptualization and management capabilities as well as grant proposal writing skills.
- Created more than 20 confluence pages being used by different teams across AURIN.
- Successfully had some leadership experiences as well as working as a project owner.

Postgraduate Researcher (Nov 2018 – Current)

Faculty of Engineering & IT, University of Melbourne Main responsibilities:

- Worked with complex structured/unstructured Spatio-temporal datasets and applied various analytical tools, techniques, and systems to analyze and interpret a wide range of research questions.
 - Leveraged sentiment analysis and text processing techniques (NLTK in Python, Vader in R) and BERT language model (in Python) to extract the semantic meaning of tweets and classify them using Torch.
 - Employed a human pose detector (OpenPifPaf) and machine-learning approaches (MLP and LSTM networks) to localize pedestrians on a platform from camera footage (Tensorflow).
 - Adapted and employed stochastic models (Hidden Markov Models and Hawkes Point Processed) to model the occurrence of events over a specific spatial domain (Using Python and MATLAB).
 - Developed multiple tools to capture, preprocess and geolocate tweets (Python, Geocoder, GeoPandas, Folium).
- Facilitated discussions and collaboration with an industrial partner (i.e., Infranexus Management Pty Ltd which is the management company for Southern Cross Station, Melbourne, Australia) to identify their real-world challenges, and understand the scope of their work to ensure that necessary support can be provided to them.
- Delivered subjects to academic clients while collaborating with other staff to improve teaching methods and expand knowledge base. I had multiple mentoring and leadership experiences. I co-supervised three postgraduate students. I helped new team members and created training and growth opportunities.
- In summary, the following technologies were used in this project:

Tool/Technologies	Python	R	
Spatial data	GeoPandas, Shapely, Folium, ArcPy		
Machine learning	PyTorch, Scikit Learn, Pomegranate	Keras for R	
NLP	NLTK, BERT, AlanNLP	Lexicon, sentimentR, Spacyr	
Toponym Resolution	Geocoder		
Others	SciPy, Numpy, Pandas	Fitdistrplus, aplpack, tidyverse (dplyr, ggplot2), fBasics	

Main achievements:

- Automated traditional survey-based approaches to enable constant monitoring of passengers' perceptions using novel data-driven approaches.
- Proposed 3 fully functional GIT repositories based on three different programming languages.
- Awarded three scholarships, one travel grant, and an Australian Global Talent Visa.
- Published several pieces of research in prestigious journals and top-tier conferences.
- Developed conflict-solving skills in students' group projects.

Spatial Software Engineer and Analytics Consultant (Sep 2015 – Nov 2018)

TFR consultants, Tehran, Iran

Working in an agile environment, my main responsibilities were as follows:

- Proactively created values for various classes of customers through the delivery of novel spatial technologies and spatial data post-processing capabilities.
- Engaged with the business to define business problems, devise analytical and data science solutions that meet business needs, and satisfy desired behavioral change and business outcomes.
- Provided thought and innovation advice in the data science, information, and analytics domain to business and team members.
- Designed and implemented two new geospatial-aware applications for different stakeholders. The used technologies are as follows:

Logic	Back-end GIS	Front-end	Front-end GIS	Database
C# ASP.NET MVC,	ArcObjects for .Net	JavaScript,	OpenLayers + Turf.js	MS-SQL Server,
C# Windows forms	framework	JQuery,		ArcGIS type in
		Kendo UI,		Database
		Bootstrap,		
		Html and CSS		

- Conducted code refactoring and added various new functionalities to the existing software.
- Collaborated with colleagues from different backgrounds (including electric engineers) to set up a new AVL module, and implement a new C++ NMEA listener accordingly.
- Supervised a team of 5 technicians for editing and creating features on surface maps. My task was to guide and provide technical support as well as to check and validate their output.
- Prepared comprehensive reports of the progress of different groups for governmental stakeholders. The reports needed to be highly descriptive, which required various report-building skills, ensuring mutual benefit realization.
- In one of the projects, I produced georeferenced imagery and maps and digitized new features upon request using AutoCAD and ArcGIS.

Main achievements:

- Improved my problem-solving and strategic-thinking capabilities
- Got a promotion in salary almost every 6 months.
- Successfully supervised a teamwork project for editing and creating spatial features
- Improved my skills by integrating spatial and programming skills.
- Learned about the importance of comprehensive reports and effective presentations to various stakeholders, especially governmental organizations.
- Demonstrated analytical and conceptual skills to deal with complex tasks concurrently with minimum supervision.
- Learned to work with technology under heavy pressure where the image of a medium-sized company relies on your design and administration 24/7.

Postgraduate Researcher (Sep 2015 – Sep 2017)

School of Surveying and Geospatial Engineering, The University of Tehran Main responsibilities:

- Enabled map matching analysis on real-world big data -- Spatio-temporal trajectories of taxis. Employed MapReduce paradigm on Java and HDFS (Apache Hadoop) to make the process faster and scalable.
- Managed to set up a Linux instance on Grid'5000 testbed and ran the analyses on that platform.
- Linked cloud computing literature to spatial analysis and transportation modeling

Main achievements:

- Improved the processing speed of big data analysis using Apache Hadoop in the context of transportation.
- Presented the research outcome at a prestigious conference.

EDUCATION

Doctor of Philosophy (PhD) in Spatial Information (Nov 2018 – Current)

Faculty of Engineering & IT, University of Melbourne, Australia. Multi-disciplinary research in spatial information, smart transport, and computer science Thesis title: Toward a constant service quality modeling for transport nodes

Master of Science (MSc) in Geospatial Information Systems (GIS) (Sep 2014 – Sep 2017)

School of Surveying and Geospatial Engineering, The University of Tehran, Iran. Thesis title: A framework for spatial analysis in traffic management using cloud computing

Bachelor of Science (BSc) in Geomatics Engineering (Sep 2009 – Sep 2013)

Iran University of Science and Technology, Iran.

HONORS AND AWARDS

- Australian Global Talent Visa to work and live permanently in Australia (2021).
- Surveying & Spatial Sciences Institute (SSSI) Travel Grant to attend Locate 2020 conference (2020).
- Newman College Academic Scholarship to undertake the Doctor of Philosophy in Engineering at The University of Melbourne, Australia (2019).
- Melbourne Research Scholarship (MRS) to undertake the Doctor of Philosophy in Engineering at The University of Melbourne, Australia (2018).
- Melbourne School of Engineering Studentship to undertake the Doctor of Philosophy in Engineering at The University of Melbourne, Australia (2018).
- Best Scientific Journal in nationwide student committees' competitions (Harekat Fest), Iran (2015).
- Best Scientific Website in nationwide student committees' competitions (Harekat Fest), Iran (2015).
- Rank 14th among 2519 applicants in the nationwide Master of Science entrance exam (2014).
- Iranian Science and Research Scholarship for Bachelor of Science -- Tuition waiver (2009).

PUBLICATIONS

Published more than six peer-reviewed journal and conference articles based on research findings.

VOLUNTARY EXPERIENCES

- Multiple leadership experiences such as supervision, teaching, and mentoring at the University of Melbourne and AURIN (2018 current).
- Mentoring first-year bachelor's students at Newman College, Australia (2019 2020).
- President of the union of academic committees, Iran University of Science and Technology (2012-2013).
- President of the Geomatics academic committee, Iran University of Science and Technology (2011-2013).