Erfan Hosseini Sereshgi

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Highly motivated and results-oriented software developer with a deep passion for research-intensive software engineering and data analysis in navigation, routing, maps, and GIS. Demonstrated ability to conduct impactful research, develop innovative algorithms, and implement efficient software solutions in C++, Java and Python. Strong publication record in leading computer science venues and extensive experience in teaching and mentoring. Specialized in shape/graph comparison methods and spatial data analysis.

KEY COMPETENCIES

Algorithm Design	Data & Analytics	Machine Learning
Programming	Software Engineering	Computational Geometry
GIS	Statistics	Optimization

PROFESSIONAL EXPERIENCE

Tulane University — 2018 - present

Graduate Researcher — **2021 - present**

- Published 5+ papers in top venues such as SoCG, WADS and ACM SIGSPATIAL
- Received Summer Graduate Award from Connolly Alexander Institute for Data Science (Data Hub) in 2023 ($2000 prize)
- Received Best paper award from ACM SIGSPATIAL International Workshop on Spatial Gems in 2021
- Developed and implemented over 3,000 lines of code for four organizational projects and co-mentored 5 undergraduate researchers

Data Scientist - LA-CEAL NIH Project — **Jan 2021 - Nov 2021**

- Was part of the group that received $1 million NIH grant to engage with communities hardest hit by COVID-19 among 12 total entities that received such a grant.
- Collected and labeled social media data of more than 25,000 users using the state-of-the-art NLP and machine learning practices (via Pytorch).
- Established and documented a framework for collecting and labeling the social media activities for future research.

Research Software Engineer - School of Public Health and Tropical Medicine — **Jan 2021 - Nov 2021**

- Implemented and maintained a python (GeoPandas) program to manage and classify collected GPS data from 100+ patients based on census data, crime reports, private datasets and public maps.

IT Specialist - Pre-college Program — **Summer 2020**

- Ensured high availability and uptime for the program's online platform, with a target of 99.9% uptime, with less than 10 minutes to acknowledge and less than 30 minutes to resolve issues.
- Helped generate revenue by enabling online courses and programs in the beginning of the 2020 pandemic, which estimated to be $100k.

AIESEC in Iran (Association Internationale des Étudiants en Sciences Économiques et Commerciales) — 2017 – 2018

Jr. Product Manager

- Led a team of 3 developers in the creation of a customer support chatbot (Python) that offered 24/7 assistance and resolved up to 75% of submitted issues within 24 hours.

Moduland.ir — Summer 2017

Front-end Developer Intern

- Designed and developed a responsive and modern-looking website under Google’s Material Design guidelines which increased the company’s exposure to the clients roughly 60%.

EDUCATION

Ph.D. in Computer Science **2018 - Expected December 2024**
Tulane University - New Orleans, LA

B.Sc. in Computer Science **2014 - 2018**
Amirkabir University of Technology (Tehran Polytechnic) - Tehran, IR

CERTIFICATIONS

Java Programming
Amirkabir University of Technology (Tehran Polytechnic)

Android Development
Amirkabir University of Technology (Tehran Polytechnic)

Web Development and Web Design
Amirkabir University of Technology (Tehran Polytechnic)

Group1. Biomedical Researchers
CITIprogram.org

Fundamentals of Deep Learning
Nvidia

TECHNICAL SKILLS

Programming Languages:
Python, C++, Java, JavaScript, SQL, R

Web Tools:
HTML, CSS

Frameworks & Other Tools:
GDAL, Pytorch, Keras, Pandas, Numpy, Pygame, Git

Applications:
QGIS, Visual Paradigm, Android studio, Adobe Photoshop, Adobe Illustrator

Management:
Agile, Scrum, Trello

PUBLICATIONS

"Graph Sampling for Map Comparison" (J. Aguilar, K. Buchin, M. Buchin, E. Hosseini Sereshgi, R.I. Silveira, C. Wenk), ACM Transactions on Spatial Algorithms and Systems,Vol.10,Iss. 3, 2024

"Drawing Reeb Graphs" (E. Chambers, B.T. Fasy, E. Hosseini Sereshgi, M. Löffler, S. Percival), 31st International Symposium on Graph Drawing and Network Visualization, Poster paper, 2023

"On Length-Sensitive Fréchet Similarity" (K. Buchin, B.T. Fasy, E. Hosseini Sereshgi, C. Wenk), 18th Algorithms and Data Structures Symposium (WADS): 208-231, 2023

"Merging Roadmaps Using Graph Distance Measures" (E. Hosseini Sereshgi and C.Wenk), 30th Fall Workshop on Computational Geometry, 5 pages, 2022

"Graph Sampling for Map Comparison" (J. Aguilar, K. Buchin, M. Buchin, E. Hosseini Sereshgi, R.I. Silveira, C. Wenk), 3rd ACM SIGSPATIAL International Workshop on Spatial Gems, 2021
Best paper award.

"Measuring Length-Preserving Fréchet Correspondence for Graphs in R^2" (K. Buchin, B.T. Fasy, E. Hosseini Sereshgi, C. Wenk), 29th Fall Workshop on Computational Geometry, 5 pages, 2021

"Improved Algorithms for Subtrajectory Clustering and Map Construction" (K. Buchin, M. Buchin, J. Gudmundsson, J. Hendriks, E. Hosseini Sereshgi, V. Sacristán, R. Silveira, J. Sleijster, F. Staals, C. Wenk), 4th ACM SIGSPATIAL Workshop on Location-Based Recommendations, Geosocial Networks, and Geoadvertising: article 5, 4 pages, 2020

"Computing relevant subtrajectory bundles faster" (E. Hosseini Sereshgi and C. Wenk), Computational Geometry: Young Researchers Forum, 2 pages, 2020