# ERFAN HOSSEINI SERESHGI

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## SUMMARY

A python software developer with notable research experience in computational geometry and algorithm development, in particular geospatial algorithms, and graph/shape comparison methods.

## PROFESSIONAL EXPERIENCE

**Data Analyst, LA-CEAL** 2021

*New Orleans, LA*

- Was part of the group that received $1 million NIH grant to engage 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.
- Established and documented a framework for collecting and labeling the social media activities for future research.

**Researcher, Geographic Momentary Assessment, Tulane Public Health** 2021

*New Orleans, LA*

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

**IT Specialist, Tulane Pre-college Program** Summer 2020

*New Orleans, LA*

- 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.
- Developed and maintained a database of frequently asked questions and troubleshooting tips for program staff and students, making it easier for them to resolve common issues on their own.

**Head of IT Guru, AIESEC in Iran** 2017 – 2018

*Tehran, Iran*

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

**Front-end Developer Intern, Moduland** Summer 2017
*Tehran, Iran*

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

**Project Manager, Dynamic Portal** 2015 – 2017
*Tehran, Iran*

- Created and led a team of 4 developers/designers in the creation of a new student information and learning management system for *AmirKabir University of Technology (Tehran Polytechnic)*
- Conducted Interviews and surveys for faculty members, staff, registrar employees and students to understand what features they would need in a student information system.
- Improved team productivity by 20% through the implementation of a new project management software, resulting in a decrease in project completion time by 15%.

## EDUCATION

**Tulane University – New Orleans – Ph.D.** 2018 – present
– Computer science

**Amirkabir University of Technology – Tehran – Bachelor of Science** 2014 – 2018
– Computer science

## RESEARCH AND PUBLICATIONS

**On Length-sensitive Fréchet Similarity** 2023
Kevin Buchin, Brittany Terese Fasy, Erfan Hosseini Sereshgi and Carola Wenk
- *Algorithms and Data Structures Symposium (WADS)*

**Merging Roadmaps using Graph Distance Measures** 2022
Erfan Hosseini Sereshgi and Carola Wenk
- *Fall Workshop on Computational Geometry (FWCG)*

**Graph Sampling for Map Comparison** (received best paper award) 2021
Jordi Aguilar, Kevin Buchin, Maike Buchin, Erfan Hosseini Sereshgi, Rodrigo I. Silveira and Carola Wenk
- *ACM Sigspatial, Spatial Gems*

**Measuring Length-Preserving Fréchet Correspondence for Graphs in $\mathbb{R}^2$** 2021
Kevin Buchin, Brittany Terese Fasy, Erfan Hosseini Sereshgi and Carola Wenk
- *Fall Workshop on Computational Geometry (FWCG)*

**Improved Map Construction using Subtrajectory Clustering** 2020
Kevin Buchin, Maike Buchin, Joachim Gudmundsson, Jorren Hendriks, Erfan Hosseini Sereshgi, Vera Sacristán, Rodrigo I. Silveira, Jorrick Sleijster, Frank Staals and Carola Wenk
- *ACM Sigspatial, LocalRec*

**Computing Relevant Subtrajectory Bundles Faster** 2020
Erfan Hosseini Sereshgi and Carola Wenk
- *Symposium on Computational Geometry, Young Researchers Forum*

**Clustering Gene Expression with Polygonal Chain Alignment** 2018
*Capstone project*

## PRESENTATIONS

**Merging Roadmaps using Graph Distance Measures** 2022
*Fall Workshop on Computational Geometry (FWCG)*

**Graph Sampling for Map Comparison** 2021
*ACM Sigspatial, Spatial Gems*

**Measuring Length-Preserving Fréchet Correspondence for Graphs in $\mathbb{R}^2$** 2021
*Fall Workshop on Computational Geometry (FWCG)*

**The Study of Gentrification on Social Urban Simulation - How Income and Interest Can Shape Neighborhoods** 2020
*Tulane University*

**Improved Map Construction using Subtrajectory Clustering** 2020
*ACM Sigspatial, Location-based Recommendations, Geosocial Networks and Geoadvertising*

**Computing Relevant Subtrajectory Bundles Faster** 2020
*SoCG, Young Researchers Forum*

**Clustering Gene Expression with Polygonal Chain Alignment** 2018
*Amirkabir University of Technology*

**A brief Intro to Computational Geometry** 2017
*Amirkabir University of Technology, Graduate studies seminar*

## TEACHING EXPERIENCE

**Arduino course at Tulane Pre-college Program** Summer 2022
*Instructor*

**Introduction to Discrete Math Lab** Fall 2020
*Teaching assistant*

**Introduction to Algorithms Lab** Fall 2019
*Teaching assistant*

**Python game design at Tulane Pre-college Program** Summer 2019 and 2022
*Instructor*

**Intro to Computer Science I Lab (Python)** *Fall 2018, Spring 2019, Spring 2020*
*Teaching assistant*

**Operating systems Lab/Workshop** Spring 2017
*Teaching assistant*

**C++ Programming teacher at Helli 4 high school** 2014 – 2015

*Instructor*

## LEADERSHIP & VOLUNTEER EXPERIENCE

- Tulane Computer Science Graduate Student Council representative (Spring 2023)
- Senator at Tulane Graduate and Professional Student Association (2020-2022)
- IT team leader at AIESEC in University of Tehran (2017-2018)
- Marketing designer at AIESEC in Amirkabir University of Technology (Spring 2017)
- AIESEC global volunteer for raising public awareness about clean energy and recycling in Guangzhou, China. (Summer 2016)
- Member of scientific association of math and computer science at Amirkabir University of Technology (2015-2016)

## CERTIFICATES

- Java programming from Amirkabir University of Technology
- Android development from Amirkabir University of Technology
- Web development and web design from Amirkabir University of Technology
- CITI Group1. Biomedical Researchers
- CITI Group4. IRB, Biomedical Research

## SKILLS & ABILITIES

- Skilled in Python, Java and C++
- Familiar with HTML, CSS and Javascript
- Have worked with R and R studio
- Familiar with Git and Visual Paradigm
- Have some basic knowledge about Android Studio
- Have experience working with Adobe Photoshop and illustrator
- Familiar with QGIS and Gdal
- Familiar with Pytorch

## LANGUAGES

- English (fluent)
- Persian (native)
- Arabic (intermediate)

## HONORS & AWARDS

- Best paper award at ACM Sigspatial: Spatial Gems (2021)
- Ranked 6$^{th}$ in the Iranian national CS graduate school entrance exam (2018)
- Ranked among top 5 computer science students at Amirkabir University of Technology (class of 2018)
- Semi-finalist in 2014 BAYAN coding contest in Iran
- Ranked among 3% in the Iranian national university/college entrance exam (2014) (More than 60,000 students)
- Was selected by and studied at the national organization for development of exceptional talents (NODET) in Iran