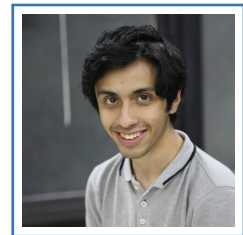# Seyed Sajad Kahani

Mr.

✉ sska1377@gmail.com
🌐 sesajad.me
in sesajad
⌂ sesajad
Date of birth: 9 May 1998
Place of birth: Tehran, Iran

Research Interests

Quantum Computation: Quantum Machine Learning, Quantum Complexity Theory

Quantum Information Theory

Type Theory and Programming Languages

Education

2016–2021 **Bachelor of Computer Engineering**, *Department of Computer Engineering, Sharif University of Technology, Tehran, Iran*.
Final score: **18.38 out of 20**
Thesis title **A Quantum Algorithm for Point In Polygon** (available on ⌂)
> Supervisor: **Dr. Abam**
> Score: **20.0**

Courseworks

Quantum Information (Grad): 16	Designing Algorithms: 20
Randomized Algorithms (Grad): 20	Computational Physics: 19
Quantum Computation (Grad): 20	

all of the scores are out of 20

Self-study: Quantum Mechanics (I, II, III), Introduction to Abstract Algebra, Quantum Complexity Theory, Theory of Computation, Statistical Learning

Summer Schools

Summer 2018 **Elementary Data Science**, *School of Computer Science, Institute for Research in Fundamental Sciences*, Tehran, Iran.

Research Experiences

2021 **On Complexity of Macroscopic Superposition**, *Department of Physics, Sharif University of Technology*, Under supervision of Dr. Karimipour.

2021 **Limits of Short-Time Quantum Annealing**, *Phanous Research and Innovation Centre*, Under supervision of Dr. Beigi.
- Preprint is available on https://arxiv.org/abs/2104.12808
- Presented in poster session, QIP2021
- Presented in poster session, TQC2021

2020 **Computing Pi using Quantum Computers**, *Deptartment of Physics, Sharif University of Technology*, Under supervision of Dr. Karimipour.
Reports are available upon request

2019 **State Construction in Quantum Hisenberg Model using ML Methods**, *Deptartment of Physics, Sharif University of Technology*, Under supervision of Dr. Karimipour.
Reports are available on ⌂

Activities

2021 **Subreviewer**, *QIP (25th Annual Conference on Quantum Information Processing)*.
Reviewing *2* submissions.

2021 **Subreviewer**, *IEEE ISIT (International Symposium on Information Theory)*.
Reviewing *1* submission.

Work Experiences

2019-now   **Researcher**, *QuOne Lab at Phanous Research and Innovation Centre*, Hezardastan Holding Group, Tehran, Iran.
- Teacher assistant for the short-course of classical machine learning
- Participation in group reading of quantum machine learning literature
- Research on limits of short-time quantum annealing (see research experiences section)

2019   **Data Scientist**, *Balad*, Hezardastan Holding Group, Tehran, Iran.
Balad is a map service which provides navigation and POI in a mobile app
- Time of arrival estimation
- City traffic data dimension reduction

2018   **Data Scientist Intern**, *Divar*, Hezardastan Holding Group, Tehran, Iran.
Divar is an Iranian leading classified advertisement platform, installed on about 20M devices with 200K daily ads.
- Extraction of informative tags (words) from image (image tagging)
- Category prediction with image and text (for ads)

2017–2018   **Product Manager**, *Cafe Bazaar*, Hezardastan Holding Group, Tehran, Iran.
Inline apps platform, was a UX-optimized easy-to-make app framework, that ran instantly on Cafebazaar App Store. (shut down at 2019)
- Managing growth from 5K up to 100K daily users.
- Enhancement of documentations and support.
- Introducing effortless authentication and location entry and other high-end features.

2015–2017   **Android Developer**, *Cafe Bazaar*, Hezardastan Holding Group, Tehran, Iran.
Cafe Bazaar is an Iranian leading App marketplace installed on more than 40M
- Redesigning the authentication system to use OTP.
- Designing and implement a custom CI/CD system with encrypted key storage.
- Making a platform to run apps immediately called "Inline Apps".

Teaching

2021   **Instructor**, *1000qubit Workshop*, Phanous Research and Innovation Centre.

2019 (Spring)   **Teacher Assistant**, *Distributed Systems (Special Topics in Computer Science)*, Dept. of Math., Sharif University of Technology.

2017, 2018 (Fall)   **Teacher Assistant**, *Fundamentals of programming Course*, Dept. of Computer Eng., Sharif University of Technology.

2017   **Instructor**, *LaTeX Workshop*, Dept. of Mathematics, Sharif University of Technology.

2016, 2017   **Instructor and Organizer**, *Linux Workshop*, Dept. of Computer Engineering, Sharif University of Technology.

2015-2020   **Physics Olympiad Teacher**, *At different schools around Iran*.

Volunteer

2019   **Technical Staff**, *ACM ICPC Regional*, Sharif University of Technology, Iran.
- Upgrade contest OS image

Summer 2018   **Technical Manager**, *Technical Development Division of Iranian National Observatory*, Institute for Research in Fundamental Sciences, Tehran, Iran.
- Resposible for the Lens Array Project
    - Connect to different kinds of imaging devices and grab and reduce image.
    - Create a database of spatial data and images.
    - Make a fully automated software to control and monitor lens array instrument.
    - Contribute in development dimm monitoring.

Development Experiences

Personal Projects

the complete list is available on

2021   **Jing** , *Performing instruments in a simple AR environment.*

2020 **From X to Y in Z Days with Spotify** ⦿ , *A tool that helps changing mood using Spotify.*
2019 **Solovay-Kitaev Simulation** ⦿ , *A visualization for solovay-kitaev theorem.*
2018 **Numeric** ⦿ , *A library for numerical analysis.*
2018 **LATEXBuild Plugin for Atom** ⦿ , *A plugin for Atom, a well-known text-editor.*
2016 **Kaashi** ⦿ , *A turing complete JSON-like declarative language.*

Open-Source Contributions

Wiki.js ⦿	*small contribution*
Tensorflow Scala ⦿	*small contribution*

Skills

Concepts

Designing Algorithms and Data Structures	*Familiar*
Numerical Methods (ODE, Equations, ...)	*Expert*
Machine Learning Methods	*Expert*
Software Architecture	*Familiar*
Software Development Methodologies	*Familiar*

Programming Languages

Python		*Expert*
	OpenCV, NumPy, Pandas	*Expert*
	Django, Flask, Celery	*Familiar*
	PySpark, Tensorflow, PyTorch	*Familiar*
	SymPy, SciPy, Scikit-Learn	*Beginner*
Julia		*Expert*
Scala		*Familiar*
	Spark, Tensorflow Scala	*Expert*
Java		*Familiar*
	Android SDK	*Familar*
Nodejs		*Familiar*
	Express, Electron	*Familiar*
C/C++		*Familiar*
	Qt	*Familiar*
	OpenCV	*Familiar*

Tools

GNU/Linux	Systemd, GRUB, Networking	*Expert*
Versioning	Git	*Expert*
CI/CD	Gitlab CI	*Familiar*
Embedded Devices	Raspberry Pi	*Familiar*
Containerization		*Familiar*
	Docker	*Expert*
	Kubernetes	*Beginner*

Honors

2021 **10th**, *National Exam for Msc. of Physics*, Iran.

2015 **(5th) Golden Medal**, *28th National Physics Olympiad of Iran*.

Languages

Persian Native

English Advanced   *TOEFL score: 102, R: 28, L: 27, S: 23, W: 24*

Arabic Intermediate

German Beginner

Greek Beginner