MEYSAM HASSANDOUST

Undergraduate Student

CONTACT

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INTEREST

Mathematical Physics
Quantum Field Theory
Quantum Gravity
Quantum Cosmology
Quantum Foundations

SKILLS

Python 4+ yrs

C/C++ 3+ yrs

HTML/CSS 2+ yrs

Latex 3+ yrs

Linux 3+ yrs

Mathematica 1+ yrs

Web Development 2+ yrs

Teaching 6+ yrs

Problem Solving

EDUCATION

BTech - Physics — **2019 - Present**
Shahid Beheshti University - Tehran, Iran

• **Courses**: Mathematical Physics, Quantum Mechanics I, Quantum Mechanics II, Electromagnetism I, Electromagnetism II, Analytical Mechanics, Theory of Relativity, Cosmology, Solid State Physics, Foundation of Matrices and Linear Algebra

High School — **2016 - 2019**
Atomic Energy High School - Tehran, Iran

• Passed with Distinction
• Specialised in Physics and Maths

RESEARCH EXPERIENCE

Quantum Cosmology — **Aug 2023 - Present**
Shahid Beheshti University

• WaveFunction of the Universe in Anisotropic Minisuperspace Model.
• Analytical solution of the Dirac equation near the event horizon of a charged black hole.

Quantum Mechanics — **Sep 2022 - Present**
Shahid Beheshti University

• Supersymmetry in Quantum Mechanics by Generalized Uncertainty Principle.
• Supersymmetry in Quantum Mechanics for Dirac equation in FRW space-time.
• Supersymmetry time dependent in Quantum Mechanics.

Quantum Optics — **Jun 2022 - Sep 2022**
Shahid Beheshti University

• Literature Review on Rydberg RF Receiver Operation to Track RF Signal Fading and Frequency Drift .
• Literature Review on Electromagnetically Induced Transparency (EIT) .
• Literature Review on Atom-based RF electric field sensing .
• Investigating the phenomenon of anti-resonance and resonance in coupled oscillators and comparing the Fano phenomenon in classical and quantum states .
• Analytical solution of N Coupled Oscillators in Classical Mechanics.

Mathematical Physics — **Jun 2022 - Present**
Shahid Beheshti University

• Pseudo-Supersymmetry time-dependent in Quantum Mechanics.
• Literature Review on Pseudo-Hermitian Hamiltonian Representation Of Quantum Mechanics .
• Literature Review on Pseudo-Supersymmetry in Quantum Mechanics.

HOBBIES

SPORT

I have played in the Mahram team in the youth category and after that, I switched to street basketball.

COOKING

I love cooking. I am an expert in most Indian-style cooking, enjoy baking and making my own pizza.

MUSIC

I am a Setar musician and used to compose music

ART

I have always enjoyed drawing since I was a child. Recently, I have worked with graffiti.

VIDEO GAMES

I always had the gaming gene. I mostly play on my PC.

Computational Work — **Jun 2020 - Present**
Shahid Beheshti University

• Numerical Approach (Monte Carlo Method) For Feynman Path Integral. (Basic)
• Numerical Approach For Schrödinger Equation .
• Numerical solution of Laplace Equation in Electromagnetic .
• Numerical solution of Ising Model .
• Numerical solution of the Three-Body Problem .

TEACHING EXPERIENCES

Mathematical Physics I Teacher's Aide — **Sep 2023 - Feb 2024**
Shahid Beheshti University

• **Course Instructor**: Prof. Mohammad Aliakbari

Quantum Mechanics I Teacher's Aide — **Sep 2023 - Feb 2024**
Shahid Beheshti University

• **Course Instructor**: Prof. Ali Sadeghi

Quantum Mechanics I Teacher's Aide — **Sep 2022 - Feb 2023**
Shahid Beheshti University

• **Course Instructor**: Prof. Ali Sadeghi

General Physics I Teacher's Aide — **Sep 2022 - Feb 2023**
Shahid Beheshti University

• **Course Instructor**: Prof. Siamak Sadat Gousheh

Mathematical Physics II Teacher's Aide — **Mar 2021 - Jun 2022**
Shahid Beheshti University

• **Course Instructor**: Prof. Ali Hosseini

Analytical Mechanics II Teacher's Aide — **Mar 2021 - Jun 2022**
Shahid Beheshti University

• **Course Instructor**: Prof. Mohammad Aliakbari

Mathematical Physics I Teacher's Aide — **Sep 2021 - Feb 2022**
Shahid Beheshti University

• **Course Instructor**: Prof. Ali Hosseini

ACHIEVMENTS

Ranked — **2023**
8th in the university students' national Physics Olympiad

Ranked — **2023**
One of the first 15 students in the national master studies entrance exam

Pass — **2018**
Passing the First Stage Of Astronomy Olympiad

Pass — 2018
Passing the First Stage Of Physics Olympiad

Pass — 2018
Passing the First Stage Of Mathematics Olympiad

Ranked — 2018
6th in the Messie Marathon

Winner — 2014
National Gold Medal WMTC Mathematics Competition

Pass — 2013
Passing the second Stage Of IMC Mathematics Competition

WORKSHOPS & CONFERENCES

The Hilbert space and holography of information in de Sitter quantum gravity — Oct 2023
ICTP

A Heavy QCD Axion model in Light of Pulsar Timing Arrays — Oct 2023
ICTP

LANGUAGES

- English : **Upper Intermediate**
- Persian : **Native Proficiency**