Vishal Johnson

vishal.johnson@physik.lmu.de, vslyo@hotmail.com • vslyo.github.io

Education

Oct 2020 – Mar 2023 (expected) **Ludwig-Maximilians-Universität München** – Germany
Masters in Physics

Aug 2013 – May 2017 **Indian Institute of Technology (Indian School of Mines) Dhanbad** – India
Bachelors in Electrical Engineering

Publications

Dec 2022 **Measurement in a Unitary World**
Vishal Johnson, Reimar Leike, Philipp Frank, Torsten Enßlin.
https://arxiv.org/abs/2212.03829.

Work Experience

Oct 2021 – Aug 2022 **Master Thesis: Quantum Mechanics from an Information Theory Perspective**
MPA Garching, LMU Munich, Mentor: PD Dr. Torsten Enßlin (MPA Garching, LMU Munich)
An attempt at a purely unitary description of quantum mechanics; explaining the measurement problem starting from the principles of quantum mechanics (more information can be found on my website: link).

Apr 2022 – Aug 2022 **Tutor: Advanced Statistical Physics**
LMU Munich, Professor: Prof. Dr. Erwin Frey (LMU Munich)
Topics included liquid matter, liquid crystals and renormalization group theory (link to course webpage).

Apr 2022 – Aug 2022 **Tutor: Information Field Theory**
LMU Munich, Professor: PD Dr. Torsten Enßlin (MPA Garching, LMU Munich)
Performing bayesian inference on continuous fields using ideas from statistical and quantum field theories (link to course webpage).

Dec 2027 – Sep 2020 **Teacher of Physics and Mathematics**
Plato's Planet, Dubai
Teaching high school physics and mathematics, designing engaging educational projects (website found here).

Jul 2016 – Dec 2016 **Intern**
DESE, IISc Bengaluru, Mentor: Suhas Srinivasan
An attempt to develop a machine learning clustering algorithm to group people according to the big five personality traits using time series audio data (website of the group).

Talks

May 2022 **Quantum Mechanics from an Information Theory Perspective**
An attempt to describe quantum mechanics using only unitary processes.
Conference on Quantum Information organised by the Society for Promotion of Science

Oct 2021 Interaction Free Measurement
A discussion of the Elitzur-Vaidman bomb tester and using it to measure a system through weak interactions.
Seminar: Artificial Intelligence, Bayes and Cognition

Jul 2021 Supersymmetry
A basic introduction to the ideas of supersymmetry in quantum field theory.
Seminar: Topics in Quantum Field Theory

Technical Skills

Programming Languages
Python, C++, Sagemath, Mathematica, MATLAB

Miscellaneous Specialized Software
LaTeX, Git